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STARTING $ALARIE$

Of Chemists and Chemical Engineers

Analysis of the
American Chemical Society's
Survey of Graduates in
Chemistry and Chemical Engineering

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1991 SURVEY REPORT

STARTING SALARIES AND EMPLOYMENT STATUS OF

CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES

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Washington, D.C. 20036

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ACKNOWLEDGMENTS

Each year, at the direction of its Joint Board-Council Committee on Economic Status, the American Chemical Society (ACS) surveys recent chemistry and chemical engineering graduates to determine trends in starting salaries and employment status. This report presents detailed results of the 1991 Starting Salary Survey. A summary of the survey findings was published in the October 21 issue of *Chemical & Engineering News*.

Joan Burrelli of the Office of Professional Services and Alicia Bowlding of the Market and Business Analysis Department conducted this year's survey and prepared this report. Dr. Burrelli wrote the summary and comment on the following pages. Special thanks go to the more than 4,000 graduates who took the time to respond to this year's survey.

Mary L. Funke, Manager
Office of Professional Services

SUMMARY OF FINDINGS

SALARIES

This year's starting salaries indicate a dim economic outlook for new BS graduates. The median salary for inexperienced BS chemists remained at $23,000 for the third year in a row. The mean starting salary was $23,868 this year, only marginally higher than last year's $23,526. After adjusting for inflation, mean salaries decreased 2% this year, and, on average, decreased .2% per year since 1980.

Starting salaries for MS and PhD chemists were somewhat better. The mean starting salary for MS chemists rose 8% this year to $31,218. The mean starting salary for PhD chemists rose .7% this year to $42,008. Inflation adjusted salaries for MS chemists rose on average .1% per year since 1980, those for PhD chemists rose on average .3% per year.

Chemical engineering graduates at all degree levels continue to earn higher salaries than those of chemists and the gap is getting larger over time. Starting salaries for new chemical engineering graduates continued to increase this year. The mean starting salary for inexperienced BS chemical engineers was $36,632 in 1991, up 7.4% from the $34,101 last year. Mean starting salaries for inexperienced MS chemical engineers rose 2% to $39,695, and for inexperienced PhD chemical engineers, they rose 3% to $50,497. Inflation adjusted salaries for BS chemical engineers rose, on average, .6% per year since 1980.

Table 1 shows average starting salaries paid to inexperienced chemistry graduates for 1990 and 1991, and gives additional information concerning the variation among individual salaries within each group. Table 2 presents corresponding information for chemical engineering graduates.

For inexperienced chemists (those with less than 12 months of experience), 1991 mean starting salaries were:

$23,858 for the	BS,	up	1.4%,	or in constant dollars	down	2.1%
$31,218 for the	MS,	up	8.3%,	or in constant dollars	up	4.5%
$42,008 for the	PhD,	up	0.7%,	or in constant dollars	down	2.8%

Among chemical engineers, the 1991 mean starting salaries were:

$36,632 for the	BS,	up	7.4%,	or in constant dollars	up	4.0%
$39,695 for the	MS,	up	2.2%,	or in constant dollars	down	1.4%
$50,497 for the	PhD,	up	2.9%,	or in constant dollars	down	0.6%

The Consumer Price Index rose 3.6% from August 1990 to August 1991. The trends in median starting salaries from 1980 to the present for inexperienced chemists and chemical engineers are shown in Figures 1 and 2.

Salaries vary by the type and characteristics of the employer as well as the educational backgrounds of the graduates. Salaries are highest in private industry and lowest in colleges or universities. The median salary for new chemistry PhDs was $48,000 for those employed in industry and $27,200 for those employed in colleges or universities (see Table A-6). Similarly, salaries are highest for chemists in applied research ($26,000 for new BS graduates) and lowest in teaching ($20,000 for new BS graduates) (see Table A-11).

Table 1

**STARTING YEARLY SALARIES
OF INEXPERIENCED FULL-TIME EMPLOYED
CHEMISTRY GRADUATES**

by Degree: 1990 and 1991

Salaries	DEGREE LEVEL					
	Bachelor's		Master's		Ph.D.	
	1990	1991	1990	1991	1990	1991
90th Percentile	$30,500	$31,500	$35,000	$40,000	$50,000	$51,600
75th Percentile	28,000	28,000	32,600	36,000	47,000	49,000
50th Percentile	23,000	23,000	30,000	32,000	44,000	46,000
25th Percentile	20,000	20,000	25,000	27,500	39,000	34,400
10th Percentile	17,000	17,400	21,700	21,100	29,000	26,000
Mean	23,526	23,858	28,825	31,218	41,699	42,008
Count	435	354	66	54	202	146
Standard Deviation	5,209	5,156	5,505	6,946	8,017	9,822

Table 2

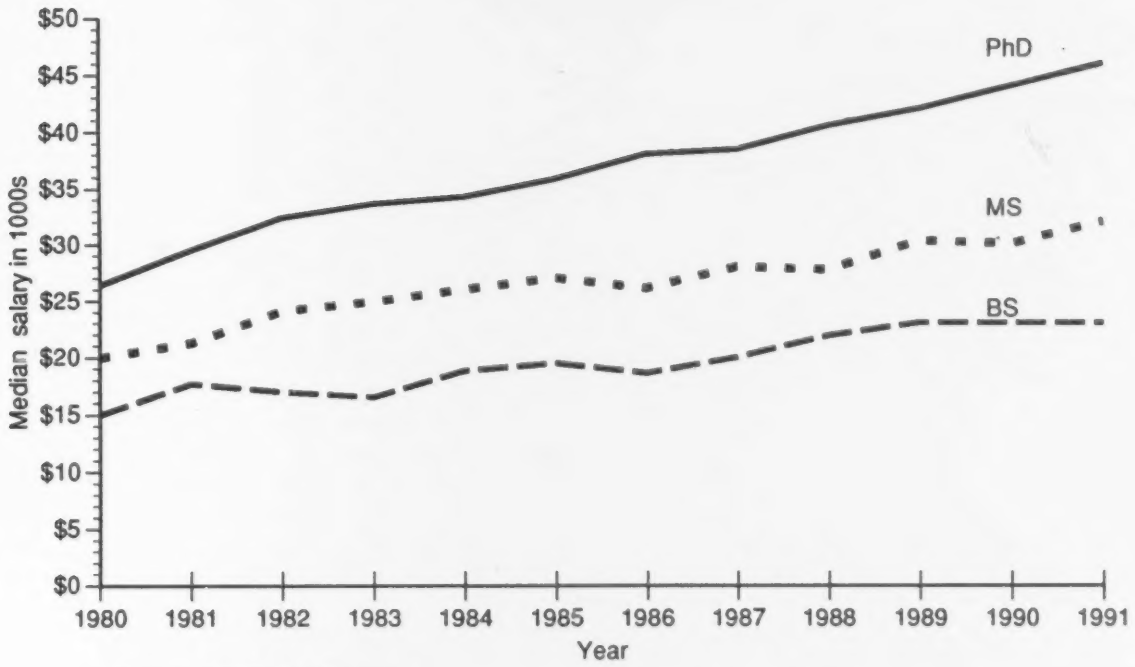
STARTING YEARLY SALARIES
OF INEXPERIENCED FULL-TIME EMPLOYED
CHEMICAL ENGINEERING GRADUATES

by Degree: 1990 and 1991

Salaries	DEGREE LEVEL					
	Bachelor's		Master's		Ph.D.	
	1990	1991	1990	1991	1990	1991
90th Percentile	$37,000	$40,000	$42,000	$44,000	$54,000	$56,000
75th Percentile	36,000	38,900	40,000	41,000	52,000	54,000
50th Percentile	35,200	37,500	37,200	40,200	50,000	52,000
25th Percentile	33,800	36,000	36,000	37,500	48,000	48,000
10th Percentile	28,900	32,000	34,800	35,100	43,000	44,200
Mean	34,101	36,632	38,855	39,695	49,055	50,497
Count	517	318	51	26	88	64
Standard Deviation	3,727	4,161	6,803	5,539	4,796	6,298

Figure 1

Median Starting Salaries of Inexperienced Chemists (in current dollars)



Source: ACS Salary Surveys

Median Starting Salaries of Inexperienced Chemists* (in current dollars)

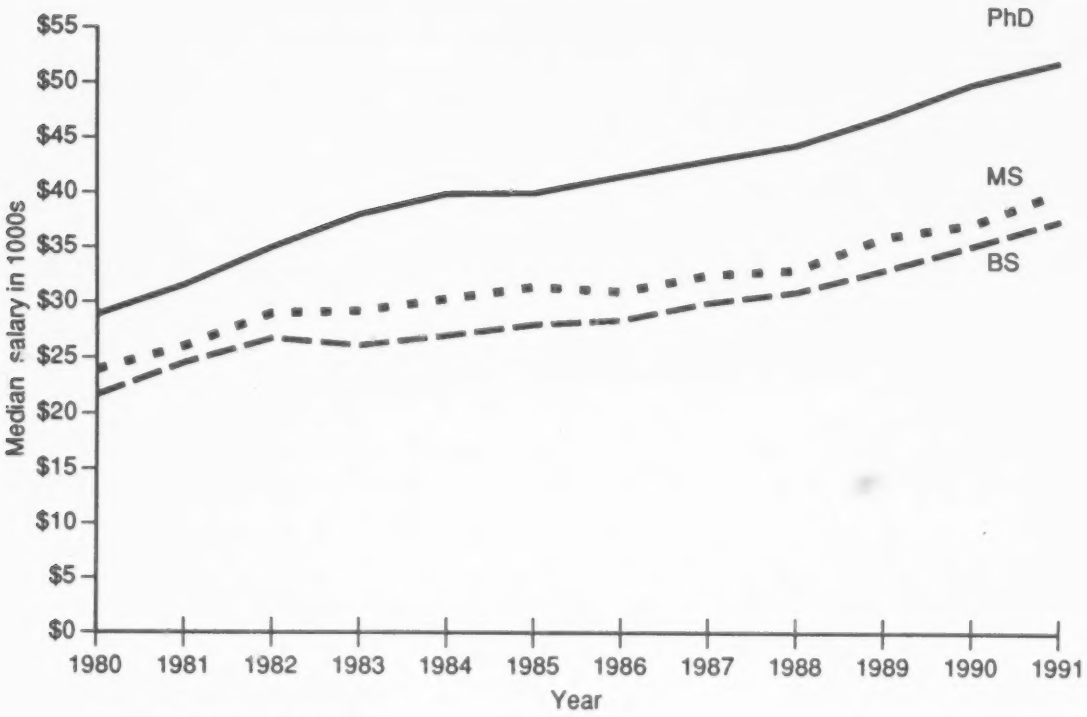
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
BS	15.0	17.7	17.0	16.5	18.8	19.5	18.6	20.0	21.9	23.0	23.0	23.0
MS	20.0	21.3	24.1	24.9	26.0	27.0	26.1	28.0	27.7	30.3	30.0	32.0
PhD	26.4	29.5	32.4	33.6	34.2	35.8	38.0	38.4	40.5	42.0	44.0	46.0

*Base annual salary in thousands of dollars

Source: ACS Starting Salary Surveys

Figure 2

Median Starting Salaries of Inexperienced Chemical Engineers (in current dollars)



Source: ACS Salary Surveys

Median Starting Salaries of Inexperienced Chemical Engineers* (in current dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
BS	21.6	24.5	26.7	26.1	27.0	28.0	28.4	30.0	31.0	33.0	35.2	37.5
MS	23.9	26.0	29.0	29.2	30.3	31.4	31.0	32.5	33.0	36.0	37.2	40.2
PhD	28.8	31.5	35.0	38.0	39.9	40.0	41.5	43.0	44.4	47.0	50.0	52.0

*Base annual salary in thousands of dollars

Source: ACS Starting Salary Surveys

Larger employers generally pay more than smaller ones. BS chemical engineers employed in larger firms (more than 24,000 employees) make $7,000 more on average than chemical engineers employed in small firms (less than 500 employees) and BS chemists employed in larger firms make $8,000 more on average than those employed in small firms (see Table A-10). Chemical engineers are much more likely than chemists to be employed in large firms. Thirty-nine percent of new chemical engineers and only 17% of new chemists are employed in firms with more than 24,000 employees. Conversely, more than a third (38%) of chemists, but only 5% of chemical engineers, are employed in firms with less than 500 employees.

Salaries for new BS chemistry graduates are highest in the Middle Atlantic region ($27,500) and lowest in the South Atlantic region ($20,200), however salaries for new BS chemical engineering graduates are fairly similar across geographic regions. Median salaries for new BS chemical engineers vary from a high of $38,500 in the West South Central region to a low of $37,000 in the South Atlantic region.

Generally speaking, bachelor's chemists receive higher salaries if their degrees are from schools that grant doctorate degrees, if they have participated in co-op programs, or if they had a high grade point average in their major. For chemical engineers, the type and size of school from which they received degrees make little difference in salaries. Chemical engineers' salaries are, however, directly related to grade point average in major and participation in a co-op program.

POST-GRADUATION EMPLOYMENT STATUS

Unemployment rates for bachelor's chemistry and chemical engineering graduates increased this year. The recent history for unemployment rates of bachelor's graduates is:

	1991	1990	1989	1988	1987	1986
Chemical Engineering	9%	6%	5%	8%	16%	21%
Chemistry	14%	13%	10%	11%	13%	13%

As Figure 3 shows, unemployment for both chemistry and chemical engineering graduates was relatively high in the mid-1980s, and relatively low in 1988 and 1989, especially for chemical engineering graduates, and has been slowly increasing the past two years.

Both chemistry and chemical engineering graduates are finding it harder to get jobs in chemistry and engineering. This year, 79% of full-time employed bachelor's chemical engineering graduates found employment in chemistry and chemical engineering compared to last year's 84% and the previous year's 82%. The proportion of new chemistry graduates who found employment in chemistry or chemical engineering has been decreasing for the last few years: 62% found employment in chemistry or chemical engineering this year, compared to last year's 63% and the previous years 65%.

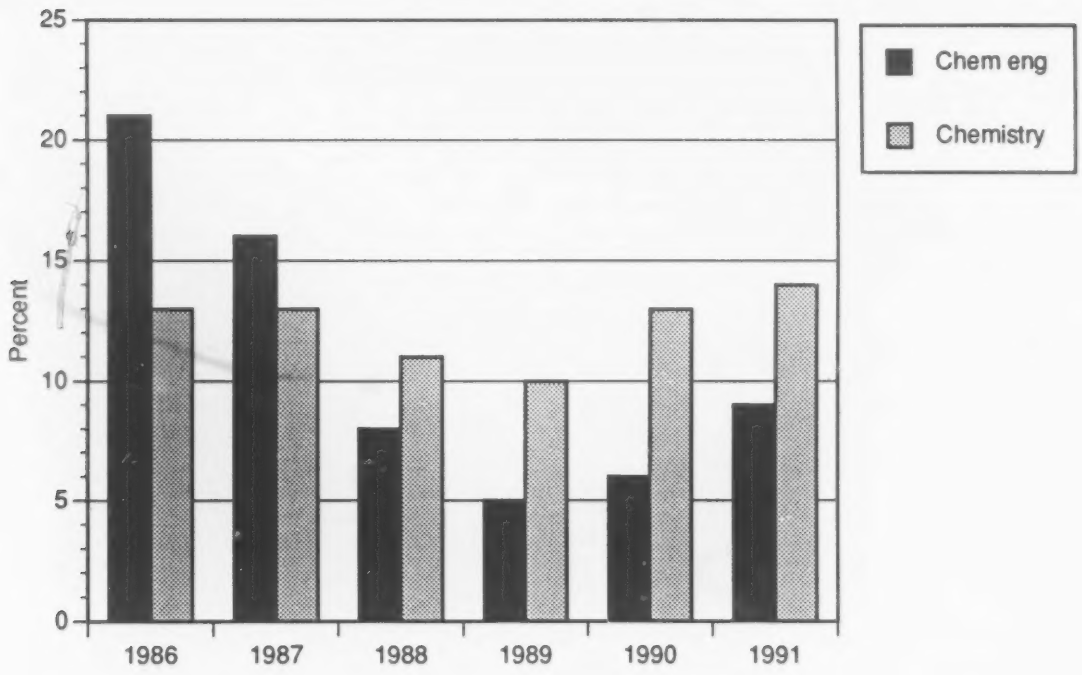
POSTDOCTORAL FELLOWSHIPS

The fraction of new PhDs who accept postdoctoral fellowships is another rough indicator of demand. Because some of the new doctoral graduates who accept postdoctoral fellowships would have preferred full-time employment had it been available, an increase in the fraction accepting postdoctoral fellowships

*Note that the calculation for the unemployment rate excludes those persons who are not seeking employment.

Figure 3

Unemployment Rates of Recent Bachelor's Graduates



Source: ACS Starting Salary Surveys

Table 3

POSTGRADUATION STATUS OF CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES: FALL 1991

Major and Employment Status	Bachelor's	Master's	Doctorate
CHEMISTRY			
Full-time employed:			
In chemistry or chemical engineering	29.6%	42.3%	47.9%
Outside chemistry or chemical engineering	6.7%	4.5%	2.9%
Grad. asst./postdoctoral or other fellowship	35.3%	42.3%	36.9%
Unemployed and seeking full-time employment	11.7%	6.5%	11.4%
Unemployed and not seeking full-time employment	16.7%	4.5%	.9%
Total	100.0	100.0	100.0
Number of responses	2,095	336	553
CHEMICAL ENGINEERING			
Full-time employed:			
In chemistry or chemical engineering	63.9%	52.6%	76.1%
Outside chemistry or chemical engineering	8.2%	3.2%	8.2%
Grad. asst./postdoctoral or other fellowship	14.1%	33.1%	7.5%
Unemployed and seeking full-time employment	8.9%	6.5%	8.2%
Unemployed and not seeking full-time employment	4.9%	4.5%	----
Total	100.0	100.0	100.0
Number of responses	801	154	134

Table 4

PLANS FOR FURTHER STUDY OF B.S. CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES: FALL 1991

Plans	Chemistry	Chemical Engineering
Further studies	73.4%	29.7%
Full-time	(55.0%)	(20.7%)
Part-time	(9.2%)	(9.0%)
No plans for further studies	(35.8%)	(70.2%)
Total	100.0	100.0
Number of responses	2,442	829

Table 5

FIELDS OF STUDY OF B.S. CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES WHO PLAN FURTHER STUDIES
Fall 1991

Fields of Study	Chemistry	Chemical Engineering
FULL-TIME STUDY		
Chemistry or biochemistry	53.7%	3.5%
Chemical or biochemical engineering	1.6%	74.4%
Medicine or dentistry	30.8%	7.0%
Business or management	.5%	2.9%
All others	13.4%	12.2%
Total	100.0	100.0
Number of responses	1,342	172
PART-TIME STUDY		
Chemistry or biochemistry	48.4%	8.0%
Chemical or biochemical engineering	4.0%	30.7%
Other engineering	3.6%	12.0%
Physical science	6.3%	-----
Life science	4.9%	-----
Medicine or dentistry	5.8%	-----
Business or management	10.8%	41.3%
Education	5.4%	-----
Law	1.3%	-----
All others	9.4%	8.0%
Total	100.0	100.0
Number of responses	223	75

can indicate insufficient full-time employment. This year, this measure of demand indicates a less favorable employment situation for PhD chemistry graduates than was the case last year: 37% of new chemistry doctorates accepted postdoctoral fellowships this year compared with 34% last year (Table 3). On the other hand, only 8% of new chemical engineering doctorates accepted postdoctoral fellowships this year compared with 10% in 1990.

PLANS FOR ADVANCED STUDY

Traditionally, between 50 and 55% of bachelor's chemistry graduates plan full-time studies (in any field) and another roughly 10% plan part-time studies. Bachelor's chemical engineering graduates are much less likely than chemistry graduates to plan further studies. Only 21% planned full-time studies this year. A summary of the plans of the 1991 graduates appears in Tables 4 and 5.

Each year, roughly one-third of new bachelor's chemistry graduates plan to pursue chemistry graduate study, one-third plan graduate study in another field, and one-third have plans for immediate employment (see Figure 4). Of those bachelor's chemistry graduates who planned further studies in another discipline in 1991, slightly more than half (53%) planned to go into medicine, 10% planned to go into dentistry or pharmacy, 4% planned to study business, 16% planned to study other natural sciences and engineering, and 17% planned to go into other fields. The choice of field of study has not changed appreciably in the last decade.

Of those bachelor's chemistry graduates who chose immediate employment, the majority chose industrial employment. Of those who are employed, 66% are employed in industry, and about 10% each are employed in academia, government, and in hospitals or independent labs.

CHEMISTRY GRADUATES WHO HAVE COMPLETED ACS APPROVED PROGRAMS

Graduates completing undergraduate chemistry programs approved by the ACS Committee on Professional Training have historically received higher starting salaries than graduates completing non-approved programs. This year, graduates who completed the ACS approved program and work in industry earn, on average, $26,000 per year compared to only $23,400 for those who did not complete the approved program.

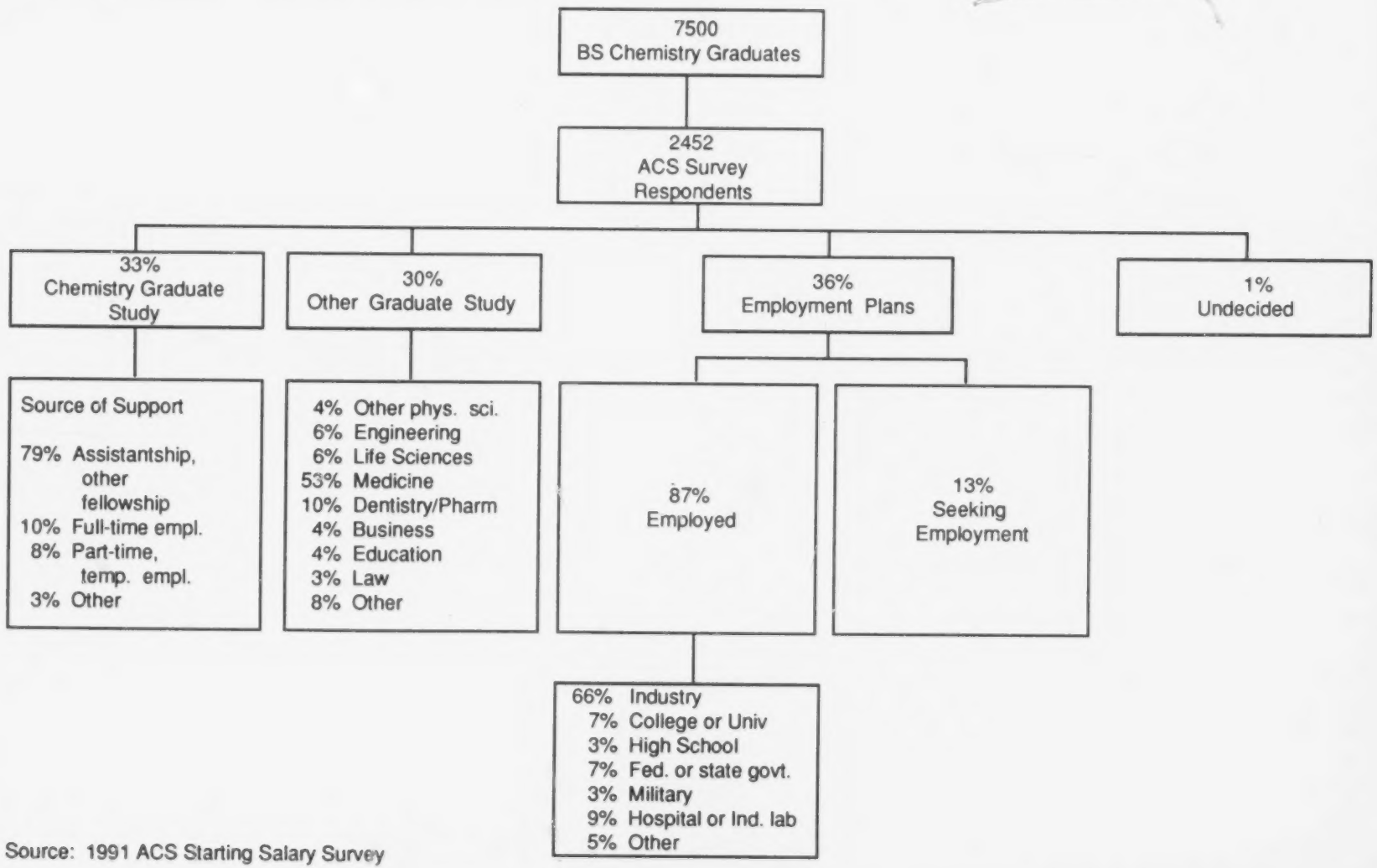
Graduates of approved programs are more likely than graduates of non-approved programs to plan further studies and to plan further studies in chemistry. Sixty percent of graduates of approved programs planned full-time studies compared with 51% of graduates of non-approved programs (Table B-4b). Of the bachelor's chemistry graduates who plan full-time studies, most (63%) of those from approved programs plan to study chemistry compared with only 26% of those from non-approved programs. Conversely, (41%) of those from non-approved programs plan to study medicine compared with only 16% of those from approved programs (Table C-5).

Graduates of approved programs are also less likely than those from non-approved programs to be unemployed and among those employed, are more likely to be employed in chemistry or chemical engineering. The unemployment rate for bachelor's graduates of approved programs was 10% this year compared to 18% for graduates of non-approved programs (Table B-4a)*. Among the full-time employed bachelor's chemistry graduates, 86% of graduates of ACS approved programs, but only 78% of graduates of non-approved programs were employed in chemistry or chemical engineering.

*Note that the calculation for the unemployment rate excludes those persons who are not seeking employment.

Figure 4

Post-graduation Plans of 1991 BS Chemistry Graduates



Source: 1991 ACS Starting Salary Survey

EMPLOYMENT OF BACHELOR'S CHEMISTS AS TECHNICIANS

About 44% of the bachelor's chemistry graduates who were employed full time in industry responded that they were employed as technicians. Those employed as technicians earned significantly lower salaries than those not employed as technicians. The median salary of bachelor's chemistry graduates employed in industry as technicians was $23,000 whereas the median salary of those not employed as technicians was $26,600. Those employed as technicians were less likely than those not employed as technicians to have earned their degree at doctorate-granting schools. They had, in general, slightly lower grade point averages, and were slightly less likely than non-technicians to have completed an ACS approved program.

RACE/ETHNIC COMPOSITION OF NEW GRADUATES

Minorities, and particularly Asians, are an increasing fraction of new graduates in chemistry and chemical engineering. The proportion of new bachelor's chemistry graduates who are Black or Hispanic has increased fairly slowly since 1973, when ACS first collected such information. In 1973, Blacks were 2.3% and Hispanics were .7% of bachelor's chemistry graduates. This year, Blacks are 3.8% and Hispanics are 2.4% of bachelor's chemistry graduates. American Indians are a very small proportion (1% or less) of new graduates in chemistry and chemical engineering at all degree levels.

The proportion of new chemistry graduates who are Asian has trebled since 1973. In that year, Asians were 3% of bachelor's, 9% of master's, and 9% of PhD graduates. This year, Asians are 9% of bachelor's, 27% of master's, and 29% of PhD graduates. Almost three-quarters of bachelor's chemistry graduates of Asian descent are U.S. citizens (either native or naturalized). Only 10% are here on temporary visas. The reverse is true for PhDs. Only 8% of doctoral chemistry graduates of Asian descent are U.S. citizens and the majority (83%) are here on temporary visas.

SCOPE AND METHOD

OBJECTIVES

The 1991 Starting Salary Survey is the 40th in the series of annual surveys now conducted by the American Chemical Society. Summaries of the results of these surveys appear annually in the "Employment Outlook" edition of the *Chemical & Engineering News*. This year preliminary results were published on October 21.

The primary objective of the survey is to gather data on the starting salaries and occupational status of new chemists and chemical engineers who graduated during the 1990-91 academic year. The survey covers bachelor's, master's and doctoral degree recipients. In addition, the survey provides information on graduates' sex, citizenship, and ethnicity.

METHOD OF COLLECTION AND TIMING OF SURVEY

Chemistry departments approved by ACS and chemical engineering departments approved by the American Institute of Chemical Engineers and the Engineer's Council for Professional Development provided names and addresses of students that graduated between September, 1990 and June, 1991. During the summer of 1991, questionnaires were mailed to those graduates who had U.S. addresses.

EXTENT OF COVERAGE

Survey questionnaires were mailed by first class mail from July through August to 9,001 graduates. Approximately 3 weeks after each initial mailing, a second questionnaire and cover letter were sent to non-respondents. By the cutoff date of October 11, ACS had received 4,662 usable responses. Another 463 questionnaires were returned as nondeliverable. No attempt was made to examine the characteristics of graduates from departments that did not participate in the survey or of those graduates who did not mail back completed questionnaires.

DEFINITIONS

The term "inexperienced" as used in the tables refers to those who have 12 months or less of prior professional work experience. The term "chemist" refers to one who received a degree in chemistry. The term "chemical engineer" refers to one who received a degree in chemical engineering. Salary tables are based only on salaries of those who found full-time employment in chemistry or chemical engineering. Postdoctoral salaries are analyzed separately. Salaries are reported in U.S. dollars.

The Technical Notes present methods for estimating sampling error and also explain certain discrepancies among some of the tables.

GEOGRAPHIC REGIONS

PACIFIC

Alaska
California
Hawaii
Oregon
Washington

MOUNTAIN

Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

WEST NORTH CENTRAL

Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota

WEST SOUTH CENTRAL

Arkansas
Louisiana
Oklahoma
Texas

EAST NORTH CENTRAL

Illinois
Indiana
Michigan
Ohio
Wisconsin

EAST SOUTH CENTRAL

Alabama
Kentucky
Mississippi
Tennessee

MIDDLE ATLANTIC

New Jersey
New York
Pennsylvania

SOUTH ATLANTIC

Delaware
District of Columbia
Florida
Georgia
Maryland
North Carolina
South Carolina
Virginia
West Virginia

NEW ENGLAND

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

TECHNICAL NOTES

DISCREPANCIES AMONG TABLES

Because not all individuals responded to all of the survey items, some pairs of tables contain totals that should be identical but are not. For example, one table may group PhDs by sex and another by employer. The totals will differ unless the number who did not indicate their sex is the same as the number who did not indicate their employer.

ESTIMATES OF MEDIAN SALARIES

Median salaries displayed within the cells of the salary tables are sample medians and are therefore subject to sampling error. This error could be quite large, especially when the number of respondents in the corresponding cell is small. Therefore, median salaries in cells with fewer than 15 respondents should not be used to estimate their corresponding population medians. Similarly, tables showing the 25th and 75th salary percentiles, and those showing the 10th and 90th salary percentiles, should have at least 25 respondents and 40 respondents, respectively.

COMPARING SALARIES

Often questions arise concerning women's salaries as compared with men's, or chemists' salaries as compared with chemical engineers'. These and similar comparisons require caution.

Statistical tests should be performed to determine whether observed differences in salaries of various sample groups could be mere chance occurrences resulting from peculiarities of the samples. Whether a difference in salaries is "statistically significant" depends not only on the magnitude of the difference but also on the sample sizes and the magnitudes of the sample standard deviations.

Discussion of statistical tests of significance may be found in *Introductory Statistics for Business and Economics,* by Thomas H. Wonnacott and Ronald J. Wonnacott, NY: Wiley, 1990, and in other similar texts.

ESTIMATING SAMPLING ERROR FOR PERCENTS

Percents in this report are derived from the sample. If the entire population had received and returned questionnaires, most estimates would be somewhat different. How much different? Although this question does not have an exact answer, the table below does provide some guidance. To use the table, find the column headed by the percent (p) derived from the sample, and find the row appropriate for the sample size (n). (Approximations for p and n may be used.) Note the number in that column and that row of the table.

This number from the body of the table measures the precision with which the sample percent estimates the percent of the entire population. Specifically, if this procedure is applied repeatedly, about 95 times out of 100, the population percent will differ from the sample percent by no more than the amount shown in the table.

Approximate Sampling Errors for Percents

n	p= 10% or 90%	p= 20% or 80%	p= 30% or 70%	p= 40% or 60%	p= 50%
50	8.3%	11.1%	12.7%	13.6%	13.9%
100	5.9	7.8	9.0	9.6	9.8
200	4.2	5.5	6.4	6.8	6.9
500	2.6	3.5	4.0	4.3	4.4
1000	1.9	2.5	2.8	3.0	3.1
2000	1.3	1.8	2.0	2.1	2.2
5000	0.8	1.1	1.3	1.4	1.4
10000	0.6	0.8	0.9	1.0	1.0

In Table B-1a for example, 2095 respondents classified as chemists indicated their highest degree as the bachelor's degree. The percent of this group who are seeking employment is listed as 11.7 percent (p=11.7). A "95% confidence interval" for this percent may be approximated by taking n and p to be about 2000 and 10%. The above table shows an approximate sampling error of 1.3%. Hence, the 95% confidence interval is 10.4% to 13%. If estimates were made at this "level of confidence" from 100 similar samples, about 95 of the confidence intervals calculated from these samples would contain the true population percent.

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Chemical Engineering Graduates					
Field of Advanced Study	BS and MS	Sex		C-3	69
Full-time Study					
Chemistry Graduates					
Field of Advanced Study	Degree	Sex		C-4	70
	ACS Approved Curriculum	BS		C-5	71
Chemical Engineering Graduates					
Field of Advanced Study	BS and MS	Sex		C-6	72
BS Chemistry and Chemical Engineering Graduates Not Employed and Not Seeking Employment					
Chemistry Graduates					
Sex	Plans for Further Studies			C-7	73
Chemical Engineering Graduates					
Sex	Plans for Further Studies			C-8	74

				Table Number	Page
AGE DISTRIBUTION OF RESPONDENTS					
All Chemistry and Chemical Engineering Graduates					
Age	Sex	BS		D-1	75
		MS		D-2	76
		PhD		D-3	77
Postdoctoral Chemists					
Age	Sex			D-4	78
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Full-time Employed Inexperienced Chemists					
Number of Offers	Degree	Sex		E-2	79
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Full-time Employed Inexperienced Chemical Engineers					
Number of Offers	Degree	Sex		E-3	81
Full-time Employed Experienced Chemical Engineers					
Number of Offers	Degree	Sex		E-4	82
ETHNIC CLASSIFICATION AND CITIZENSHIP					
All Chemistry Graduates					
Citizenship	Degree	Ethnicity		F-1	83
		Sex		F-2	86
Minority Chemistry Graduates					
Minority Classification	Degree	Sex		F-3	87
All Chemical Engineering Graduates					
Citizenship	Degree	Ethnicity		F-4	88
		Sex		F-5	91
Minority Chemical Engineering Graduates					
Minority Classification	Degree	Sex		F-6	92

Table A-1

SALARIES of CHEMISTS employed FULL-TIME
by DEGREE and EXPERIENCE
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK EXPERIENCE			
LESS THAN 12 MONTHS			
Median	23,000	32,000	46,000
Mean	23,858	31,218	42,008
Std Dev	5,156	6,946	9,822
Count	354	54	146
12 TO 36 MONTHS			
Median	25,000	32,000	47,000
Mean	25,128	31,664	43,515
Std Dev	5,919	5,320	9,332
Count	182	39	57
MORE THAN 36 MONTHS			
Median	30,000	35,450	42,000
Mean	30,373	36,411	39,114
Std Dev	8,404	9,579	12,422
Count	83	48	58
TOTAL			
Median	24,000	34,000	46,000
Mean	25,112	33,158	41,703
Std Dev	6,285	7,942	10,414
Count	619	141	261

Table A-2

SALARIES of CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EXPERIENCE
1991 ACS Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK EXPERIENCE			
LESS THAN 12 MONTHS			
Median	37,500	40,200	52,000
Mean	36,632	39,695	50,497
Std Dev	4,161	5,539	6,298
Count	318	26	64
12 TO 36 MONTHS			
Median	38,040	39,600	52,500
Mean	37,385	39,774	52,339
Std Dev	3,729	2,569	4,284
Count	178	29	18
MORE THAN 36 MONTHS			
Median	37,000	45,968	52,700
Mean	36,780	47,578	51,396
Std Dev	6,609	9,936	8,286
Count	19	23	20
TOTAL			
Median	37,800	41,000	52,000
Mean	36,898	41,903	51,013
Std Dev	4,141	7,175	6,427
Count	515	78	102

Table A-3

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
in PRIVATE INDUSTRY by SEX and DEGREE
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	25,000	35,000	48,000
Mean	24,917	34,406	46,747
Std Dev	4,740	5,655	5,753
Count	110	16	77
WOMEN			
Median	24,000	32,110	47,000
Mean	25,458	31,674	46,445
Std Dev	5,427	4,837	5,759
Count	129	19	29
TOTAL			
Median	24,500	33,500	47,850
Mean	25,209	32,960	46,663
Std Dev	5,120	5,339	5,728
Count	239	35	106

Table A-4

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME in PRIVATE INDUSTRY by SEX and DEGREE
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	37,800	40,200	52,200
Mean	37,151	40,327	50,610
Std Dev	3,138	4,183	6,148
Count	191	21	42
WOMEN			
Median	37,500	40,600	53,400
Mean	37,544	41,300	52,530
Std Dev	3,264	1,851	3,112
Count	100	4	10
TOTAL			
Median	37,500	40,200	52,560
Mean	37,283	40,482	51,002
Std Dev	3,181	3,892	5,688
Count	291	25	52

Table A-5

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and SEX
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	23,000	35,000	46,200
Mean	23,651	33,263	41,984
Std Dev	4,940	6,394	10,159
Count	162	27	103
WOMEN			
Median	23,000	30,160	45,000
Mean	24,032	29,009	41,872
Std Dev	5,338	6,959	9,100
Count	192	27	42
TOTAL			
Median	23,000	32,000	46,000
Mean	23,858	31,218	41,952
Std Dev	5,156	6,946	9,833
Count	354	54	145

Table A-6

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	24,500	33,500	48,000
Mean	25,209	32,960	46,694
Std Dev	5,120	5,339	5,710
Count	239	35	107
COLLEGE OR UNIV			
Median	19,500	20,100	27,200
Mean	19,149	19,056	27,993
Std Dev	2,602	6,522	6,034
Count	30	6	32
HIGH SCHOOL			
Median	21,000	35,000	---
Mean	20,362	35,000	---
Std Dev	2,665	14,142	---
Count	12	2	0
FEDERAL GOVT			
Median	21,000	28,000	31,100
Mean	22,527	28,567	32,833
Std Dev	4,161	1,250	3,993
Count	25	3	3
MILITARY			
Median	23,000	40,000	---
Mean	22,740	40,000	---
Std Dev	5,276	0	---
Count	5	1	0
STATE OR LOCAL GOVT			
Median	22,500	26,000	---
Mean	23,348	26,900	---
Std Dev	5,810	3,928	---
Count	9	3	0
HOSPITAL OR LAB			
Median	20,000	35,000	42,500
Mean	20,569	32,000	42,500
Std Dev	3,715	6,083	3,536
Count	27	3	3
OTHER			
Median	24,000	35,000	25,000
Mean	22,768	35,000	25,000
Std Dev	4,447	0	0
Count	7	1	1
TOTAL			
Median	23,000	32,000	46,000
Mean	23,858	31,218	42,008
Std Dev	5,156	6,946	9,822
Count	354	54	146

Table A-7

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - MEN only
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	25,000	35,000	48,000
Mean	24,917	34,406	46,747
Std Dev	4,740	5,655	5,753
Count	110	16	77
COLLEGE OR UNIV			
Median	19,500	23,800	26,300
Mean	19,351	23,800	26,295
Std Dev	3,011	5,233	5,907
Count	12	2	20
HIGH SCHOOL			
Median	18,750	45,000	---
Mean	19,423	45,000	---
Std Dev	2,395	0	---
Count	8	1	0
FEDERAL GOVT			
Median	20,000	29,000	31,100
Mean	20,622	29,000	32,833
Std Dev	4,388	1,414	3,993
Count	11	2	3
MILITARY			
Median	27,750	40,000	---
Mean	27,750	40,000	---
Std Dev	1,768	0	---
Count	2	1	0
STATE OR LOCAL GOVT			
Median	25,749	26,000	---
Mean	25,749	26,000	---
Std Dev	10,959	0	---
Count	2	1	0
HOSPITAL OR LAB			
Median	20,500	35,000	42,500
Mean	20,894	32,000	42,500
Std Dev	3,742	6,083	3,536
Count	13	3	2
OTHER			
Median	24,538	35,000	25,000
Mean	24,269	35,000	25,000
Std Dev	4,923	0	0
Count	4	1	1
TOTAL			
Median	23,000	35,000	46,200
Mean	23,651	33,263	41,984
Std Dev	4,940	6,394	10,159
Count	162	27	103

Table A-8

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and EMPLOYER - WOMEN only
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	24,000	32,110	47,000
Mean	25,458	31,674	46,445
Std Dev	5,427	4,837	5,759
Count	129	19	29
COLLEGE OR UNIV			
Median	19,500	17,000	30,300
Mean	19,025	15,893	30,822
Std Dev	2,403	5,819	5,325
Count	18	4	12
HIGH SCHOOL			
Median	22,500	25,000	---
Mean	22,867	25,000	---
Std Dev	1,582	0	---
Count	4	1	0
FEDERAL GOVT			
Median	22,600	27,700	---
Mean	24,024	27,700	---
Std Dev	3,417	0	---
Count	14	1	0
MILITARY			
Median	19,200	---	---
Mean	19,400	---	---
Std Dev	3,504	---	---
Count	3	0	0
STATE OR LOCAL GOVT			
Median	22,500	27,350	---
Mean	22,662	27,350	---
Std Dev	4,746	5,445	---
Count	7	2	0
HOSPITAL OR LAB			
Median	19,500	---	---
Mean	20,267	---	---
Std Dev	3,805	---	---
Count	14	0	1
OTHER			
Median	21,300	---	---
Mean	20,767	---	---
Std Dev	3,530	---	---
Count	3	0	0
TOTAL			
Median	23,000	30,160	45,000
Mean	24,032	29,009	41,872
Std Dev	5,338	6,959	9,100
Count	192	27	42

Table A-9

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME in INDUSTRY
by DEGREE and TYPE OF INDUSTRY
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
TYPE OF INDUSTRY			
NONMANUFACTURING			
Median	22,000	30,500	43,340
Mean	22,336	28,400	43,273
Std Dev	4,422	5,910	5,966
Count	82	5	8
BASIC CHEMS			
Median	29,000	---	49,000
Mean	27,491	---	48,912
Std Dev	4,595	---	3,144
Count	10	0	13
SPECIALTY CHEMS			
Median	24,000	40,000	46,050
Mean	25,158	37,407	45,669
Std Dev	3,756	4,492	4,257
Count	33	3	24
PETROLEUM			
Median	30,600	33,000	51,000
Mean	27,140	33,000	50,403
Std Dev	6,378	0	2,965
Count	12	1	10
PHARMACEUTICALS			
Median	28,500	35,000	48,000
Mean	27,944	34,264	46,808
Std Dev	4,875	5,277	7,858
Count	51	18	25
PLASTICS			
Median	24,250	---	48,250
Mean	25,750	---	48,433
Std Dev	3,926	---	1,657
Count	4	0	6
OTHER			
Median	26,500	30,080	47,000
Mean	26,406	31,443	45,410
Std Dev	4,888	3,310	6,250
Count	46	7	21
TOTAL			
Median	24,500	34,000	48,000
Mean	25,209	33,110	46,694
Std Dev	5,120	5,348	5,710
Count	238	34	107

Table A-10

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME in INDUSTRY
by DEGREE and EMPLOYER SIZE
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
NUMBER OF EMPLOYEES			
LESS THAN 500			
Median	22,000	30,000	40,000
Mean	21,957	31,580	41,636
Std Dev	3,977	5,668	7,649
Count	90	7	11
500 TO 2,499			
Median	25,750	32,000	44,500
Mean	25,324	32,091	43,623
Std Dev	4,380	5,659	7,538
Count	44	9	18
2,500 TO 9,999			
Median	27,250	33,000	47,000
Mean	26,666	33,443	47,410
Std Dev	4,535	5,024	2,609
Count	31	8	22
10,000 TO 24,999			
Median	30,000	36,000	48,000
Mean	28,657	37,333	45,774
Std Dev	4,083	4,163	6,279
Count	22	3	17
24,000 OR MORE			
Median	30,000	35,000	49,000
Mean	29,211	33,083	49,587
Std Dev	4,815	5,685	2,900
Count	40	8	39
TOTAL			
Median	24,500	33,500	48,000
Mean	25,148	32,960	46,694
Std Dev	5,148	5,339	5,710
Count	227	35	107

Table A-11

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and WORK FUNCTION
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK FUNCTION			
TEACHING			
Median	20,000	25,000	30,000
Mean	19,915	28,136	30,398
Std Dev	2,975	14,391	4,396
Count	13	6	20
MGMT OR ADMIN			
Median	23,050	29,850	42,700
Mean	24,200	29,850	37,550
Std Dev	6,851	3,041	14,708
Count	10	2	4
BASIC RESEARCH			
Median	22,150	36,500	47,000
Mean	23,189	33,260	39,698
Std Dev	5,601	8,191	12,888
Count	80	11	31
APPLIED RESEARCH			
Median	26,000	35,000	47,500
Mean	26,287	33,634	46,415
Std Dev	5,102	3,993	5,590
Count	71	15	79
PRODUCTION			
Median	23,500	30,250	46,400
Mean	23,553	29,850	45,303
Std Dev	4,460	5,850	5,148
Count	102	10	6
OTHER			
Median	22,000	28,750	32,000
Mean	23,396	29,088	35,150
Std Dev	5,168	4,819	11,568
Count	70	8	5
TOTAL			
Median	23,000	32,000	46,000
Mean	23,896	31,366	42,079
Std Dev	5,205	7,026	9,820
Count	346	52	145

Table A-12

SALARIES of INEXPERIENCED B.S. CHEMISTS employed FULL-TIME
by EMPLOYER and CERTIFICATION
1991 Starting Salary Survey

	CURRICULUM APPROVED?		TOTAL
	NO	YES	
EMPLOYER			
PRIVATE INDUSTRY			
Median	23,432	26,000	24,500
Mean	24,138	26,308	25,209
Std Dev	4,911	5,116	5,120
Count	123	116	239
COLLEGE OR UNIV			
Median	19,750	19,000	19,500
Mean	19,045	19,318	19,149
Std Dev	2,490	2,892	2,602
Count	19	11	30
HIGH SCHOOL			
Median	19,000	22,000	21,000
Mean	19,998	22,000	20,362
Std Dev	2,828	707	2,665
Count	10	2	12
FEDERAL GOVT			
Median	21,500	21,000	21,000
Mean	22,669	21,960	22,527
Std Dev	4,476	2,865	4,161
Count	20	5	25
MILITARY			
Median	21,100	26,500	23,000
Mean	21,800	26,500	22,740
Std Dev	5,588	0	5,276
Count	4	1	5
STATE OR LOCAL GOVT			
Median	22,500	---	22,500
Mean	23,348	---	23,348
Std Dev	5,810	---	5,810
Count	9	0	9
HOSPITAL OR LAB			
Median	18,720	20,600	20,000
Mean	20,264	20,950	20,569
Std Dev	3,724	3,833	3,715
Count	15	12	27
OTHER			
Median	17,000	24,038	24,000
Mean	17,000	23,729	22,768
Std Dev	0	3,996	4,447
Count	1	6	7
TOTAL			
Median	22,000	24,620	23,000
Mean	22,901	25,079	23,858
Std Dev	4,883	5,253	5,156
Count	201	153	354

Table A-13

SALARIES of INEXPERIENCED MS and PhD CHEMISTS employed FULL-TIME
by DEGREE and DEGREE SPECIALTY
1991 Starting Salary Survey

	HIGHEST DEGREE	
	MS	PHD
DEGREE SPECIALTY		
BIOCHEMISTRY		
Median	20,100	27,400
Mean	27,367	29,943
Std Dev	15,349	10,774
Count	3	7
GENERAL CHEM		
Median	25,000	---
Mean	26,833	---
Std Dev	4,537	---
Count	3	0
ANALYTICAL CHEM		
Median	31,200	47,000
Mean	30,433	44,740
Std Dev	7,625	7,383
Count	16	45
INORGANIC CHEM		
Median	29,000	38,070
Mean	27,290	38,087
Std Dev	4,307	8,911
Count	4	27
ORGANIC CHEM		
Median	35,000	46,750
Mean	34,798	42,463
Std Dev	4,505	10,433
Count	21	50
PHYSICAL CHEM		
Median	27,500	47,500
Mean	27,860	43,708
Std Dev	5,812	11,193
Count	6	13
POLYMER CHEM		
Median	---	50,050
Mean	---	50,050
Std Dev	---	1,485
Count	0	2
OTHER CHEM		
Median	25,000	45,500
Mean	25,000	45,500
Std Dev	0	3,536
Count	1	2
TOTAL		
Median	32,000	46,000
Mean	31,218	42,008
Std Dev	6,946	9,822
Count	54	146

Table A-14

SALARIES of INEXPERIENCED CHEMISTS employed FULL-TIME
by DEGREE and GEOGRAPHIC REGION
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
REGION			
Pacific			
Median	25,652	32,000	40,000
Mean	25,524	33,314	39,371
Std Dev	5,443	6,119	9,690
Count	26	7	7
Mountain			
Median	21,300	20,100	30,000
Mean	22,470	20,100	33,917
Std Dev	4,204	0	12,002
Count	16	1	6
West North Central			
Median	22,250	30,000	33,682
Mean	21,763	29,907	36,172
Std Dev	5,099	2,361	9,679
Count	20	3	12
West South Central			
Median	21,250	32,100	47,500
Mean	22,048	30,867	45,971
Std Dev	4,851	5,458	7,238
Count	23	6	27
East North Central			
Median	24,000	34,500	47,000
Mean	24,308	32,360	42,840
Std Dev	4,348	4,899	8,817
Count	95	11	41
East South Central			
Median	22,000	23,039	36,000
Mean	22,286	23,270	38,771
Std Dev	5,400	5,550	9,612
Count	21	4	7
Middle Atlantic			
Median	27,500	35,000	48,500
Mean	26,353	34,387	45,040
Std Dev	5,682	6,186	8,037
Count	67	11	20
South Atlantic			
Median	20,200	31,280	49,200
Mean	21,604	28,520	41,250
Std Dev	4,658	10,086	13,078
Count	58	8	13
New England			
Median	25,000	40,000	44,000
Mean	24,972	40,000	41,622
Std Dev	5,234	0	12,391
Count	18	2	10
TOTAL			
Median	23,000	32,000	46,000
Mean	23,866	31,202	42,201
Std Dev	5,218	7,014	9,765
Count	344	53	143

Table A-15

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and SEX
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
SEX			
MEN			
Median	37,500	40,100	52,000
Mean	36,586	39,403	50,184
Std Dev	3,973	5,954	6,795
Count	208	22	52
WOMEN			
Median	37,500	40,600	52,400
Mean	36,670	41,300	51,775
Std Dev	4,553	1,851	3,559
Count	108	4	12
TOTAL			
Median	37,500	40,200	52,000
Mean	36,614	39,695	50,497
Std Dev	4,168	5,539	6,298
Count	316	26	64

Table A-16

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	37,530	40,200	52,560
Mean	37,298	40,482	51,002
Std Dev	3,174	3,892	5,688
Count	293	25	52
COLLEGE OR UNIV			
Median	21,079	20,000	46,300
Mean	21,079	20,000	47,913
Std Dev	0	0	12,065
Count	1	1	6
FEDERAL GOVT			
Median	26,376	---	50,000
Mean	27,330	---	49,060
Std Dev	5,763	---	2,830
Count	15	0	5
MILITARY			
Median	28,000	---	---
Mean	28,000	---	---
Std Dev	0	---	---
Count	1	0	0
STATE OR LOCAL GOVT			
Median	26,500	---	---
Mean	28,625	---	---
Std Dev	6,156	---	---
Count	4	0	0
HOSPITAL OR LAB			
Median	---	---	48,410
Mean	---	---	48,410
Std Dev	---	---	0
Count	0	0	1
OTHER			
Median	35,524	---	---
Mean	35,962	---	---
Std Dev	1,309	---	---
Count	4	0	0
TOTAL			
Median	37,500	40,200	52,000
Mean	36,632	39,695	50,497
Std Dev	4,161	5,539	6,298
Count	318	26	64

Table A-17

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER - MEN only
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	37,800	40,200	52,200
Mean	37,151	40,327	50,610
Std Dev	3,138	4,183	6,148
Count	191	21	42
COLLEGE OR UNIV			
Median	---	20,000	47,000
Mean	---	20,000	48,496
Std Dev	---	0	13,394
Count	0	1	5
FEDERAL GOVT			
Median	26,500	---	49,550
Mean	28,219	---	48,575
Std Dev	7,017	---	3,018
Count	9	0	4
MILITARY			
Median	28,000	---	---
Mean	28,000	---	---
Std Dev	0	---	---
Count	1	0	0
STATE OR LOCAL GOVT			
Median	28,000	---	---
Mean	30,167	---	---
Std Dev	6,526	---	---
Count	3	0	0
HOSPITAL OR LAB			
Median	---	---	48,410
Mean	---	---	48,410
Std Dev	---	---	0
Count	0	0	1
OTHER			
Median	35,524	---	---
Mean	35,962	---	---
Std Dev	1,309	---	---
Count	4	0	0
TOTAL			
Median	37,500	40,100	52,000
Mean	36,586	39,403	50,184
Std Dev	3,973	5,954	6,795
Count	208	22	52

Table A-18

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and EMPLOYER - WOMEN only
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
EMPLOYER			
PRIVATE INDUSTRY			
Median	37,500	40,600	53,400
Mean	37,544	41,300	52,530
Std Dev	3,264	1,851	3,112
Count	100	4	10
COLLEGE OR UNIV			
Median	21,079	---	45,000
Mean	21,079	---	45,000
Std Dev	0	---	0
Count	1	0	1
FEDERAL GOVT			
Median	26,252	---	51,000
Mean	25,730	---	51,000
Std Dev	2,118	---	0
Count	6	0	1
STATE OR LOCAL GOVT			
Median	24,000	---	---
Mean	24,000	---	---
Std Dev	0	---	---
Count	1	0	0
TOTAL			
Median	37,500	40,600	52,400
Mean	36,670	41,300	51,775
Std Dev	4,553	1,851	3,559
Count	108	4	12

Table A-19

SALARIES of CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY
by DEGREE and TYPE OF INDUSTRY
1991 ACS Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
TYPE OF INDUSTRY			
NONMANUFACTURING			
Median	37,200	38,500	37,500
Mean	35,655	40,250	40,750
Std Dev	4,274	7,136	8,500
Count	45	4	5
BASIC CHEMS			
Median	37,700	40,600	55,200
Mean	37,732	39,325	52,928
Std Dev	1,227	2,842	4,034
Count	32	4	5
SPECIALTY CHEMS			
Median	37,500	40,930	52,800
Mean	36,925	41,927	51,886
Std Dev	2,726	4,826	2,919
Count	50	6	8
PETROLEUM			
Median	40,000	41,000	54,000
Mean	39,846	41,300	54,154
Std Dev	3,089	1,643	1,912
Count	58	5	13
PHARMACEUTICALS			
Median	38,000	37,500	51,000
Mean	37,825	37,500	50,551
Std Dev	2,086	0	6,576
Count	19	1	6
PLASTICS			
Median	37,500	40,000	50,000
Mean	37,172	39,733	50,250
Std Dev	2,242	643	2,630
Count	25	3	4
OTHER			
Median	37,000	39,500	51,200
Mean	36,109	39,500	49,996
Std Dev	2,522	4,950	6,254
Count	62	2	11
TOTAL			
Median	37,530	40,200	52,560
Mean	37,300	40,482	51,002
Std Dev	3,184	3,892	5,688
Count	291	25	52

Table A-20

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME in INDUSTRY by DEGREE and EMPLOYER SIZE
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
NUMBER OF EMPLOYEES			
LESS THAN 500			
Median	31,000	36,000	35,000
Mean	31,294	36,000	40,667
Std Dev	4,663	0	9,815
Count	16	1	5
500 TO 2,499			
Median	37,000	41,100	50,000
Mean	36,122	41,875	49,500
Std Dev	3,697	7,120	7,550
Count	45	4	4
2,500 TO 9,999			
Median	37,500	40,600	52,800
Mean	37,619	40,600	48,760
Std Dev	2,518	566	8,734
Count	49	2	5
10,000 TO 24,999			
Median	38,000	40,000	54,000
Mean	38,319	40,623	52,131
Std Dev	2,987	4,514	4,601
Count	61	7	11
24,000 OR MORE			
Median	38,000	40,200	52,280
Mean	37,990	40,273	52,380
Std Dev	1,666	2,456	3,190
Count	113	11	27
TOTAL			
Median	37,560	40,200	52,560
Mean	37,314	40,482	51,002
Std Dev	3,185	3,892	5,688
Count	284	25	52

Table A-21

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and WORK FUNCTION
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
WORK FUNCTION			
TEACHING			
Median	---	---	47,000
Mean	---	---	49,293
Std Dev	---	---	5,791
Count	0	0	3
MGMT OR ADMIN			
Median	35,500	---	35,000
Mean	33,113	---	35,000
Std Dev	5,109	---	0
Count	18	0	2
BASIC RESEARCH			
Median	35,000	35,000	49,700
Mean	32,172	35,000	49,600
Std Dev	5,463	21,213	11,905
Count	9	2	6
APPLIED RESEARCH			
Median	37,500	40,860	52,000
Mean	37,076	40,221	51,139
Std Dev	3,920	2,118	5,026
Count	127	17	51
PRODUCTION			
Median	38,000	40,000	---
Mean	37,667	39,000	---
Std Dev	3,075	2,646	---
Count	120	3	0
OTHER			
Median	36,810	38,000	47,000
Mean	34,642	40,325	47,000
Std Dev	4,992	7,730	9,899
Count	42	4	2
TOTAL			
Median	37,500	40,200	52,000
Mean	36,616	39,695	50,497
Std Dev	4,169	5,539	6,298
Count	316	26	64

Table A-22

SALARIES of INEXPERIENCED CHEMICAL ENGINEERS employed FULL-TIME
by DEGREE and GEOGRAPHIC REGION
1991 Starting Salary Survey

	HIGHEST DEGREE		
	BS	MS	PHD
REGION			
Pacific			
Median	37,800	41,000	54,000
Mean	36,996	38,667	53,000
Std Dev	6,096	4,041	1,871
Count	22	3	5
Mountain			
Median	37,010	---	49,550
Mean	36,452	---	49,550
Std Dev	3,018	---	636
Count	11	0	2
West North Central			
Median	37,320	37,200	54,050
Mean	37,064	37,200	54,050
Std Dev	862	0	3,041
Count	11	1	2
West South Central			
Median	38,500	40,430	54,500
Mean	38,542	39,110	54,066
Std Dev	2,326	2,817	2,192
Count	79	6	12
East North Central			
Median	37,500	38,250	52,500
Mean	37,289	38,250	49,888
Std Dev	2,457	1,061	7,411
Count	44	2	8
East South Central			
Median	37,500	40,000	46,500
Mean	36,373	40,000	44,075
Std Dev	3,226	0	6,123
Count	15	1	4
Middle Atlantic			
Median	37,200	42,000	52,000
Mean	36,078	43,913	51,068
Std Dev	3,930	4,363	7,424
Count	56	8	19
South Atlantic			
Median	37,000	40,000	49,200
Mean	34,477	33,400	46,945
Std Dev	5,906	11,605	6,760
Count	59	3	8
New England			
Median	35,000	38,100	48,000
Mean	34,814	38,100	48,000
Std Dev	3,221	2,970	0
Count	8	2	1
TOTAL			
Median	37,500	40,200	52,000
Mean	36,671	39,695	50,646
Std Dev	4,178	5,539	6,250
Count	305	26	61

Table B-1a

CHEMISTRY GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1991 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FULL-TIME IN CHEMISTRY	27.1% 306	32.6% 315	29.6% 621	42.7% 85	41.6% 57	42.3% 142	48.2% 196	47.3% 69	47.9% 265
FULL-TIME IN NONCHEMISTRY	6.6% 74	6.8% 66	6.7% 140	4.5% 9	4.4% 6	4.5% 15	2.2% 9	4.8% 7	2.9% 16
FELLOWSHIP	38.9% 439	31.0% 300	35.3% 739	42.7% 85	41.6% 57	42.3% 142	36.6% 149	37.7% 55	36.9% 204
SEEKING EMPLOYMENT	10.2% 115	13.4% 130	11.7% 245	5.5% 11	8.0% 11	6.5% 22	12.0% 49	9.6% 14	11.4% 63
NOT SEEKING EMPLOYMENT	17.2% 194	16.1% 156	16.7% 350	4.5% 9	4.4% 6	4.5% 15	1.0% 4	.7% 1	.9% 5
TOTAL	100.0% 1128	100.0% 967	100.0% 2095	100.0% 199	100.0% 137	100.0% 336	100.0% 407	100.0% 146	100.0% 553

Table B-1b

CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1991, SEX, and DEGREE
1991 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
PURSUE ADVANCED STUDIES IN FALL 91									
YES, FULL-TIME	59.1% 795	50.0% 548	55.0% 1343	51.2% 104	44.7% 63	48.5% 167	10.3% 40	9.0% 13	10.0% 53
YES, PART-TIME	8.7% 117	9.9% 108	9.2% 225	7.4% 15	5.0% 7	6.4% 22	3.1% 12	2.1% 3	2.8% 15
NO	32.2% 434	40.1% 440	35.8% 874	41.4% 84	50.4% 71	45.1% 155	86.6% 335	88.9% 128	87.2% 463
TOTAL	100.0% 1346	100.0% 1096	100.0% 2442	100.0% 203	100.0% 141	100.0% 344	100.0% 387	100.0% 144	100.0% 531

Table B-2a

CHEMISTRY GRADUATES
by DEGREE, EMPLOYMENT STATUS and CITIZENSHIP
1991 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
BACHELORS				
FULL-TIME IN CHEMISTRY	30.3% 577	25.0% 24	26.6% 17	13.3% 4
FULL-TIME IN NONCHEMISTRY	6.7% 127	9.4% 9	6.3% 4	.0% 0
FELLOWSHIP	36.0% 687	19.8% 19	20.3% 13	66.7% 20
SEEKING EMPLOYMENT	11.3% 215	9.4% 9	25.0% 16	16.7% 5
NOT SEEKING EMPLOYMENT	15.7% 300	36.5% 35	21.9% 14	3.3% 1
TOTAL	100.0% 1906	100.0% 96	100.0% 64	100.0% 30
MASTERS				
FULL-TIME IN CHEMISTRY	49.8% 109	45.5% 5	63.6% 7	21.3% 20
FULL-TIME IN NONCHEMISTRY	4.6% 10	9.1% 1	9.1% 1	3.2% 3
FELLOWSHIP	35.2% 77	36.4% 4	18.2% 2	62.8% 59
SEEKING EMPLOYMENT	5.9% 13	9.1% 1	9.1% 1	7.4% 7
NOT SEEKING EMPLOYMENT	4.6% 10	.0% 0	.0% 0	5.3% 5
TOTAL	100.0% 219	100.0% 11	100.0% 11	100.0% 94
DOCTORATE				
FULL-TIME IN CHEMISTRY	53.7% 189	57.1% 8	40.6% 13	35.3% 55
FULL-TIME IN NONCHEMISTRY	3.7% 13	.0% 0	.0% 0	1.9% 3
FELLOWSHIP	33.8% 119	35.7% 5	40.6% 13	43.6% 68
SEEKING EMPLOYMENT	7.7% 27	7.1% 1	18.8% 6	18.6% 29
NOT SEEKING EMPLOYMENT	1.1% 4	.0% 0	.0% 0	.6% 1
TOTAL	100.0% 352	100.0% 14	100.0% 32	100.0% 156

Table B-2b

CHEMISTRY GRADUATES
by DEGREE, PLANS FOR FURTHER STUDIES IN FALL 1991 and CITIZENSHIP
1991 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 91				
BACHELORS				
YES, FULL-TIME	54.6% 1208	59.2% 74	48.0% 36	78.1% 25
YES, PART-TIME	9.0% 200	9.6% 12	14.7% 11	6.3% 2
NO	36.3% 803	31.2% 39	37.3% 28	15.6% 5
TOTAL	100.0% 2211	100.0% 125	100.0% 75	100.0% 32
MASTERS				
YES, FULL-TIME	40.8% 93	36.4% 4	18.2% 2	73.1% 68
YES, PART-TIME	5.7% 13	27.3% 3	9.1% 1	5.4% 5
NO	53.5% 122	36.4% 4	72.7% 8	21.5% 20
TOTAL	100.0% 228	100.0% 11	100.0% 11	100.0% 93
DOCTORATE				
YES, FULL-TIME	8.3% 29	.0% 0	16.1% 5	14.0% 19
YES, PART-TIME	2.8% 10	14.3% 2	3.2% 1	1.5% 2
NO	88.9% 312	85.7% 12	80.6% 25	84.6% 115
TOTAL	100.0% 351	100.0% 14	100.0% 31	100.0% 136

Table B-3a

BS CHEMISTRY GRADUATES
by DEGREE, EMPLOYMENT STATUS and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY	33.3% 5	30.8% 16	6.9% 2	32.6% 29	26.7% 20	18.8% 9	30.3% 535	20.0% 2
FULL-TIME IN NONCHEMISTRY	.0% 0	3.8% 2	6.9% 2	6.7% 6	8.0% 6	8.3% 4	6.6% 117	20.0% 2
FELLOWSHIP	46.7% 7	36.5% 19	24.1% 7	19.1% 17	30.7% 23	33.3% 16	36.4% 644	40.0% 4
SEEKING EMPLOYMENT	13.3% 2	5.8% 3	6.9% 2	22.5% 20	16.0% 12	14.6% 7	11.3% 199	.0% 0
NOT SEEKING	6.7% 1	23.1% 12	55.2% 16	19.1% 17	18.7% 14	25.0% 12	15.4% 273	20.0% 2
TOTAL	100.0% 15	100.0% 52	100.0% 29	100.0% 89	100.0% 75	100.0% 48	100.0% 1768	100.0% 10

Table B-3a (Continued)

MS CHEMISTRY GRADUATES
by DEGREE, EMPLOYMENT STATUS and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY	.0% 0	32.2% 19	28.6% 2	28.0% 7	50.0% 4	25.0% 2	48.6% 108	.0% 0
FULL-TIME IN NONCHEMISTRY	.0% 0	1.7% 1	.0% 0	8.0% 2	.0% 0	.0% 0	5.0% 11	20.0% 1
FELLOWSHIP	.0% 0	50.8% 30	71.4% 5	60.0% 15	50.0% 4	75.0% 6	35.6% 79	20.0% 1
SEEKING EMPLOYMENT	.0% 0	10.2% 6	.0% 0	4.0% 1	.0% 0	.0% 0	6.3% 14	20.0% 1
NOT SEEKING EMPLOYMENT	.0% 0	5.1% 3	.0% 0	.0% 0	.0% 0	.0% 0	4.5% 10	40.0% 2
TOTAL	.0% 0	100.0% 59	100.0% 7	100.0% 25	100.0% 8	100.0% 8	100.0% 222	100.0% 5

Table B-3a (Continued)

PhD CHEMISTRY GRADUATES
by DEGREE, EMPLOYMENT STATUS and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY	100.0% 1	43.8% 46	.0% 0	28.3% 13	53.8% 7	46.7% 7	52.5% 189	60.0% 3
FULL-TIME IN NONCHEMISTRY	.0% 0	2.9% 3	.0% 0	2.2% 1	.0% 0	.0% 0	3.3% 12	.0% 0
FELLOWSHIP	.0% 0	36.2% 38	70.0% 7	60.9% 28	15.4% 2	26.7% 4	34.4% 124	40.0% 2
SEEKING EMPLOYMENT	.0% 0	16.2% 17	30.0% 3	8.7% 4	30.8% 4	26.7% 4	8.6% 31	.0% 0
NOT SEEKING	.0% 0	1.0% 1	.0% 0	.0% 0	.0% 0	.0% 0	1.1% 4	.0% 0
TOTAL	100.0% 1	100.0% 105	100.0% 10	100.0% 46	100.0% 13	100.0% 15	100.0% 360	100.0% 5

Table B-3b

CHEMISTRY GRADUATES
by DEGREE, PLANS FOR FURTHER STUDIES IN FALL 1991 and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 91								
BACHELORS								
YES, FULL-TIME	56.3% 9	68.6% 48	78.0% 32	49.1% 52	50.5% 46	53.6% 30	54.5% 1111	57.1% 8
YES, PART-TIME	.0% 0	10.0% 7	.0% 0	12.3% 13	12.1% 11	12.5% 7	9.1% 185	7.1% 1
NO	43.8% 7	21.4% 15	22.0% 9	38.7% 41	37.4% 34	33.9% 19	36.4% 741	35.7% 5
TOTAL	100.0% 16	100.0% 70	100.0% 41	100.0% 106	100.0% 91	100.0% 56	100.0% 2037	100.0% 14
MASTERS								
YES, FULL-TIME	.0% 0	63.9% 39	71.4% 5	56.5% 13	37.5% 3	62.5% 5	42.2% 97	60.0% 3
YES, PART-TIME	.0% 0	6.6% 4	14.3% 1	8.7% 2	.0% 0	12.5% 1	5.7% 13	20.0% 1
NO	.0% 0	29.5% 18	14.3% 1	34.8% 8	62.5% 5	25.0% 2	52.2% 120	20.0% 1
TOTAL	.0% 0	100.0% 61	100.0% 7	100.0% 23	100.0% 8	100.0% 8	100.0% 230	100.0% 5

Table B-3b (Continued)

CHEMISTRY GRADUATES
by DEGREE, PLANS FOR FURTHER STUDIES IN FALL 1991 and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 91								
DOCTORATE								
YES, FULL-TIME	.0% 0	6.7% 6	30.0% 3	20.5% 8	8.3% 1	.0% 0	9.6% 35	.0% 0
YES, PART-TIME	.0% 0	3.3% 3	.0% 0	5.1% 2	8.3% 1	7.1% 1	2.2% 8	.0% 0
NO	100.0% 1	90.0% 81	70.0% 7	74.4% 29	83.3% 10	92.9% 13	88.2% 320	100.0% 4
TOTAL	100.0% 1	100.0% 90	100.0% 10	100.0% 39	100.0% 12	100.0% 14	100.0% 363	100.0% 4

Table B-4a

BS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and CERTIFICATION
1991 Starting Salary Survey

	CURRICULUM APPROVED?	
	NO	YES
EMPLOYMENT STATUS		
FULL-TIME IN CHEMISTRY	31.0% 345	28.2% 277
FULL-TIME IN NONCHEMISTRY	8.6% 96	4.5% 44
FELLOWSHIP	25.7% 286	46.0% 453
SEEKING EMPLOYMENT	14.0% 156	9.0% 89
NOT SEEKING EMPLOYMENT	20.6% 229	12.3% 121
TOTAL	100.0% 1112	100.0% 984

Table B-4b

BS CHEMISTRY GRADUATES
by PLANS FOR FURTHER STUDIES AND CERTIFICATION
1991 Starting Salary Survey

	CURRICULUM APPROVED?	
	NO	YES
PURSUE ADVANCED STUDIES IN FALL 91		
YES, FULL-TIME	51.0% 685	59.9% 658
YES, PART-TIME	10.0% 135	8.2% 90
NO	39.0% 524	31.9% 351
TOTAL	100.0% 1344	100.0% 1099

Table B-5

MASTERS CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1991 Starting Salary Survey

	EMPLOYMENT STATUS					TOTAL
	FT IN CHEM	FT IN NONCHEM	FELLOW-SHIP	SEEKING EMPL	NOT SEEK EMPL	
FIELD OF HIGHEST DEGREE						
BIOCHEMISTRY	37.5% 9	4.2% 1	45.8% 11	.0% 0	12.5% 3	100.0% 24
GENERAL CHEM	66.7% 24	5.6% 2	19.4% 7	2.8% 1	5.6% 2	100.0% 36
ANALYTICAL CHEM	50.7% 36	2.8% 2	35.2% 25	7.0% 5	4.2% 3	100.0% 71
INORGANIC CHEM	28.2% 11	2.6% 1	53.8% 21	12.8% 5	2.6% 1	100.0% 39
ORGANIC CHEM	49.0% 47	6.3% 6	37.5% 36	4.2% 4	3.1% 3	100.0% 96
PHYSICAL CHEM	15.5% 9	3.4% 2	65.5% 38	10.3% 6	5.2% 3	100.0% 58
POLYMER CHEM	44.4% 4	11.1% 1	33.3% 3	11.1% 1	.0% 0	100.0% 9
OTHER CHEM	66.7% 2	.0% 0	33.3% 1	.0% 0	.0% 0	100.0% 3
TOTAL	42.3% 142	4.5% 15	42.3% 142	6.5% 22	4.5% 15	100.0% 336

Table B-6

PHD CHEMISTRY GRADUATES
by EMPLOYMENT STATUS and DEGREE SPECIALTY
1991 Starting Salary Survey

	EMPLOYMENT STATUS					TOTAL
	FT IN CHEM	FT IN NONCHEM	FELLOW-SHIP	SEEKING EMPL	NOT SEEK EMPL	
FIELD OF HIGHEST DEGREE						
BIOCHEMISTRY	28.6% 14	4.1% 2	63.3% 31	4.1% 2	.0% 0	100.0% 49
GENERAL CHEM	40.0% 2	40.0% 2	20.0% 1	.0% 0	.0% 0	100.0% 5
ANALYTICAL CHEM	75.0% 84	1.8% 2	18.8% 21	3.6% 4	.9% 1	100.0% 112
INORGANIC CHEM	46.3% 38	2.4% 2	28.0% 23	19.5% 16	3.7% 3	100.0% 82
ORGANIC CHEM	45.8% 81	.6% 1	42.9% 76	10.2% 18	.6% 1	100.0% 177
PHYSICAL CHEM	32.0% 32	4.0% 4	44.0% 44	20.0% 20	.0% 0	100.0% 100
POLYMER CHEM	57.1% 12	.0% 0	33.3% 7	9.5% 2	.0% 0	100.0% 21
OTHER CHEM	30.0% 3	30.0% 3	30.0% 3	10.0% 1	.0% 0	100.0% 10
TOTAL	47.8% 266	2.9% 16	37.1% 206	11.3% 63	.9% 5	100.0% 556

Table B-7a

CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS, SEX, and DEGREE
1991 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FULL-TIME IN CHEMISTRY	63.5% 342	64.9% 170	63.9% 512	54.5% 67	45.2% 14	52.6% 81	80.0% 88	58.3% 14	76.1% 102
FULL-TIME IN NONCHEMISTRY	7.8% 42	9.2% 24	8.2% 66	3.3% 4	3.2% 1	3.2% 5	6.4% 7	16.7% 4	8.2% 11
FELLOWSHIP	15.4% 83	11.5% 30	14.1% 113	30.1% 37	45.2% 14	33.1% 51	7.3% 8	8.3% 2	7.5% 10
SEEKING EMPLOYMENT	8.3% 45	9.9% 26	8.9% 71	8.1% 10	.0% 0	6.5% 10	6.4% 7	16.7% 4	8.2% 11
NOT SEEKING EMPLOYMENT	5.0% 27	4.6% 12	4.9% 39	4.1% 5	6.5% 2	4.5% 7	.0% 0	.0% 0	.0% 0
TOTAL	100.0% 539	100.0% 262	100.0% 801	100.0% 123	100.0% 31	100.0% 154	100.0% 110	100.0% 24	100.0% 134

Table B-7b

CHEMICAL ENGINEERING GRADUATES
by PLANS FOR FURTHER STUDIES IN FALL 1991, SEX, and DEGREE
1991 Starting Salary Survey

	BACHELORS			MASTERS			DOCTORATE		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
PURSUE ADVANCED STUDIES IN FALL 91									
YES, FULL-TIME	22.5% 125	17.2% 47	20.7% 172	39.7% 50	51.5% 17	42.1% 67	1.9% 2	.0% 0	1.6% 2
YES, PART-TIME	8.8% 49	9.5% 26	9.0% 75	6.3% 8	9.1% 3	6.9% 11	.9% 1	.0% 0	.8% 1
NO	68.6% 381	73.4% 201	70.2% 582	54.0% 68	39.4% 13	50.9% 81	97.2% 103	100.0% 23	97.7% 126
TOTAL	100.0% 555	100.0% 274	100.0% 829	100.0% 126	100.0% 33	100.0% 159	100.0% 106	100.0% 23	100.0% 129

Table B-8a

CHEMICAL ENGINEERING GRADUATES
by DEGREE, EMPLOYMENT STATUS, and CITIZENSHIP
1991 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
BACHELORS				
FULL-TIME IN CHEMISTRY	65.3% 488	51.9% 14	64.7% 11	16.7% 2
FULL-TIME IN NON-CHEMISTRY	8.7% 65	.0% 0	.0% 0	8.3% 1
FELLOWSHIP	13.8% 103	11.1% 3	23.5% 4	25.0% 3
SEEKING EMPLOYMENT	7.6% 57	22.2% 6	11.8% 2	41.7% 5
NOT SEEKING EMPLOYMENT	4.6% 34	14.8% 4	.0% 0	8.3% 1
TOTAL	100.0% 747	100.0% 27	100.0% 17	100.0% 12
MASTERS				
FULL-TIME IN CHEMISTRY	65.2% 58	33.3% 2	66.7% 4	32.1% 17
FULL-TIME IN NON-CHEMISTRY	4.5% 4	.0% 0	.0% 0	1.9% 1
FELLOWSHIP	25.8% 23	66.7% 4	.0% 0	45.3% 24
SEEKING EMPLOYMENT	1.1% 1	.0% 0	33.3% 2	13.2% 7
NOT SEEKING EMPLOYMENT	3.4% 3	.0% 0	.0% 0	7.5% 4
TOTAL	100.0% 89	100.0% 6	100.0% 6	100.0% 53
DOCTORATE				
FULL-TIME IN CHEMISTRY	71.8% 56	100.0% 6	75.0% 9	81.6% 31
FULL-TIME IN NON-CHEMISTRY	10.3% 8	.0% 0	.0% 0	7.9% 3
FELLOWSHIP	7.7% 6	.0% 0	8.3% 1	7.9% 3
SEEKING EMPLOYMENT	10.3% 8	.0% 0	16.7% 2	2.6% 1
NOT SEEKING EMPLOYMENT	.0% 0	.0% 0	.0% 0	.0% 0
TOTAL	100.0% 78	100.0% 6	100.0% 12	100.0% 38

Table B-8b

CHEMICAL ENGINEERING GRADUATES
by DEGREE, PLANS FOR FURTHER STUDIES IN FALL 1991, and CITIZENSHIP
1991 Starting Salary Survey

	CITIZENSHIP			
	U.S. NATIVE	U.S. NATURAL-IZED	U.S. PERMANENT RESIDENT	OTHER VISA
PURSUE ADVANCED STUDIES IN FALL 91				
BACHELORS				
YES, FULL-TIME	19.8% 153	31.0% 9	27.8% 5	41.7% 5
YES, PART-TIME	9.2% 71	10.3% 3	16.7% 3	.0% 0
NO	71.0% 549	58.6% 17	55.6% 10	58.3% 7
TOTAL	100.0% 773	100.0% 29	100.0% 18	100.0% 12
MASTERS				
YES, FULL-TIME	27.8% 25	66.7% 4	.0% 0	66.7% 38
YES, PART-TIME	11.1% 10	.0% 0	.0% 0	1.8% 1
NO	61.1% 55	33.3% 2	100.0% 6	31.6% 18
TOTAL	100.0% 90	100.0% 6	100.0% 6	100.0% 57
DOCTORATE				
YES, FULL-TIME	2.6% 2	.0% 0	.0% 0	.0% 0
YES, PART-TIME	1.3% 1	.0% 0	.0% 0	.0% 0
NO	96.2% 75	100.0% 6	100.0% 10	100.0% 35
TOTAL	100.0% 78	100.0% 6	100.0% 10	100.0% 35

Table B-9a

BS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY	42.9% 3	37.5% 6	37.5% 3	42.3% 11	52.9% 9	85.7% 18	65.7% 459	33.3% 1
FULL-TIME IN NON-CHEMISTRY	28.6% 2	.0% 0	.0% 0	11.5% 3	11.8% 2	4.8% 1	8.2% 57	33.3% 1
FELLOWSHIP	28.6% 2	12.5% 2	50.0% 4	11.5% 3	29.4% 5	4.8% 1	13.4% 94	33.3% 1
SEEKING EMPLOYMENT	.0% 0	31.3% 5	12.5% 1	19.2% 5	.0% 0	4.8% 1	8.4% 59	.0% 0
NOT SEEKING EMPLOYMENT	.0% 0	18.8% 3	.0% 0	15.4% 4	5.9% 1	.0% 0	4.3% 30	.0% 0
TOTAL	100.0% 7	100.0% 16	100.0% 8	100.0% 26	100.0% 17	100.0% 21	100.0% 699	100.0% 3

Table B-9a (Continued)

MS CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY	.0% 0	31.6% 6	45.5% 10	66.7% 2	100.0% 1	16.7% 1	60.8% 59	33.3% 2
FULL-TIME IN NON-CHEMISTRY	.0% 0	5.3% 1	.0% 0	.0% 0	.0% 0	.0% 0	4.1% 4	.0% 0
FELLOWSHIP	.0% 0	52.6% 10	31.8% 7	33.3% 1	.0% 0	66.7% 4	26.8% 26	50.0% 3
SEEKING EMPLOYMENT	.0% 0	5.3% 1	13.6% 3	.0% 0	.0% 0	.0% 0	5.2% 5	16.7% 1
NOT SEEKING EMPLOYMENT	.0% 0	5.3% 1	9.1% 2	.0% 0	.0% 0	16.7% 1	3.1% 3	.0% 0
TOTAL	.0% 0	100.0% 19	100.0% 22	100.0% 3	100.0% 1	100.0% 6	100.0% 97	100.0% 6

Table B-9a (Continued)

PhD CHEMICAL ENGINEERING GRADUATES
by EMPLOYMENT STATUS and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
FULL-TIME IN CHEMISTRY	.0% 0	82.4% 14	88.2% 15	66.7% 6	100.0% 1	50.0% 2	74.1% 63	100.0% 1
FULL-TIME IN NONCHEMISTRY	.0% 0	5.9% 1	5.9% 1	.0% 0	.0% 0	50.0% 2	8.2% 7	.0% 0
FELLOWSHIP	.0% 0	5.9% 1	.0% 0	33.3% 3	.0% 0	.0% 0	7.1% 6	.0% 0
SEEKING EMPLOYMENT	.0% 0	5.9% 1	5.9% 1	.0% 0	.0% 0	.0% 0	10.6% 9	.0% 0
NOT SEEKING EMPLOYMENT	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
TOTAL	.0% 0	100.0% 17	100.0% 17	100.0% 9	100.0% 1	100.0% 4	100.0% 85	100.0% 1

Table B-9b

CHEMICAL ENGINEERING GRADUATES
by DEGREE, PLANS FOR FURTHER STUDIES IN FALL 1991 and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 91								
BACHELORS								
YES, FULL-TIME	37.5% 3	31.3% 5	55.6% 5	34.6% 9	33.3% 6	13.6% 3	19.0% 137	33.3% 1
YES, PART-TIME	25.0% 2	12.5% 2	11.1% 1	11.5% 3	5.6% 1	22.7% 5	8.4% 61	.0% 0
NO	37.5% 3	56.3% 9	33.3% 3	53.8% 14	61.1% 11	63.6% 14	72.6% 524	66.7% 2
TOTAL	100.0% 8	100.0% 16	100.0% 9	100.0% 26	100.0% 18	100.0% 22	100.0% 722	100.0% 3
MASTERS								
YES, FULL-TIME	.0% 0	63.2% 12	52.0% 13	33.3% 1	.0% 0	85.7% 6	32.7% 32	50.0% 3
YES, PART-TIME	.0% 0	.0% 0	4.0% 1	.0% 0	.0% 0	.0% 0	10.2% 10	.0% 0
NO	.0% 0	36.8% 7	44.0% 11	66.7% 2	100.0% 1	14.3% 1	57.1% 56	50.0% 3
TOTAL	.0% 0	100.0% 19	100.0% 25	100.0% 3	100.0% 1	100.0% 7	100.0% 98	100.0% 6

Table B-9b (Continued)

CHEMICAL ENGINEERING GRADUATES
by DEGREE, PLANS FOR FURTHER STUDIES IN FALL 1991 and ETHNICITY
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP							
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER
PURSUE ADVANCED STUDIES IN FALL 91								
DOCTORATE								
YES, FULL-TIME	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	2.4% 2	.0% 0
YES, PART-TIME	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	1.2% 1	.0% 0
NO	.0% 0	100.0% 15	100.0% 17	100.0% 8	.0% 0	100.0% 4	96.4% 81	100.0% 1
TOTAL	.0% 0	100.0% 15	100.0% 17	100.0% 8	.0% 0	100.0% 4	100.0% 84	100.0% 1

Table C-1

CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1991
by FIELD OF ADVANCED STUDY, DEGREE, and SEX
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FIELD OF FURTHER STUDIES									
CHEMISTRY	50.9% 59	29.9% 32	40.8% 91	60.0% 9	50.0% 3	57.1% 12	25.0% 3	.0% 0	20.0% 3
PHYSICAL SCIENCE	6.9% 8	5.6% 6	6.3% 14	6.7% 1	.0% 0	4.8% 1	.0% 0	.0% 0	.0% 0
CHEM ENG	5.2% 6	2.8% 3	4.0% 9	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
OTHER ENG	2.6% 3	4.7% 5	3.6% 8	.0% .0	16.7% 1	4.8% 1	.0% 0	.0% 0	.0% 0
BIOCHEMISTRY	7.8% 9	7.5% 8	7.6% 17	.0% 0	.0% 0	.0% 0	8.3% 1	33.3% 1	13.3% 2
LIFE SCIENCE	2.6% 3	7.5% 8	4.9% 11	.0% 0	.0% 0	.0% 0	8.3% 1	33.3% 1	13.3% 2
MEDICINE	4.3% 5	5.6% 6	4.9% 11	.0% 0	.0% 0	.0% 0	.0% 0	33.3% 1	6.7% 1
DENTISTRY	.9% 1	.9% 1	.9% 2	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
PHARMACY	2.6% 3	.9% 1	1.8% 4	6.7% 1	.0% 0	4.8% 1	8.3% 1	.0% 0	6.7% 1
BUSINESS	8.6% 10	13.1% 14	10.8% 24	6.7% 1	.0% 0	4.8% 1	25.0% 3	.0% 0	20.0% 3
EDUCATION	1.7% 2	9.3% 10	5.4% 12	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
LAW	1.7% 2	.9% 1	1.3% 3	13.3% 2	.0% 0	9.5% 2	16.7% 2	.0% 0	13.3% 2
OTHER	4.3% 5	11.2% 12	7.6% 17	6.7% 1	33.3% 2	14.3% 3	8.3% 1	.0% 0	6.7% 1
TOTAL	100.0% 116	100.0% 107	100.0% 223	100.0% 15	100.0% 6	100.0% 21	100.0% 12	100.0% 3	100.0% 15

Table C-2

BS CHEMISTRY GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1991
by FIELD OF ADVANCED STUDY and CERTIFICATION
1991 Starting Salary Survey

	CURRICULUM APPROVED?		TOTAL
	NO	YES	
FIELD OF FURTHER STUDIES			
CHEMISTRY	32.3% 43	53.3% 48	40.8% 91
PHYSICAL SCIENCE	7.5% 10	4.4% 4	6.3% 14
CHEM ENG	3.8% 5	4.4% 4	4.0% 9
OTHER ENG	4.5% 6	2.2% 2	3.6% 8
BIOCHEMISTRY	6.8% 9	8.9% 8	7.6% 17
LIFE SCIENCE	7.5% 10	1.1% 1	4.9% 11
MEDICINE	6.8% 9	2.2% 2	4.9% 11
DENTISTRY	.8% 1	1.1% 1	.9% 2
PHARMACY	2.3% 3	1.1% 1	1.8% 4
BUSINESS	11.3% 15	10.0% 9	10.8% 24
EDUCATION	6.8% 9	3.3% 3	5.4% 12
LAW	.8% 1	2.2% 2	1.3% 3
OTHER	9.0% 12	5.6% 5	7.6% 17
TOTAL	100.0% 133	100.0% 90	100.0% 223

Table C-3

CHEMICAL ENGINEERING GRADUATES WHO PLAN PART-TIME STUDIES IN FALL 1991
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FIELD OF FURTHER STUDIES						
CHEMISTRY	6.1% 3	7.7% 2	6.7% 5	.0% 0	.0% 0	.0% 0
CHEM ENG	28.6% 14	34.6% 9	30.7% 23	50.0% 4	33.3% 1	45.5% 5
OTHER ENG	10.2% 5	15.4% 4	12.0% 9	12.5% 1	33.3% 1	18.2% 2
BIOCHEMISTRY	.0% 0	3.8% 1	1.3% 1	.0% 0	.0% 0	.0% 0
BUSINESS	51.0% 25	23.1% 6	41.3% 31	25.0% 2	.0% 0	18.2% 2
OTHER	4.1% 2	15.4% 4	8.0% 6	12.5% 1	33.3% 1	18.2% 2
TOTAL	100.0% 49	100.0% 26	100.0% 75	100.0% 8	100.0% 3	100.0% 11

Table C-4

CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1991
by FIELD OF ADVANCED STUDY, DEGREE, and SEX
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FIELD OF FURTHER STUDIES									
CHEMISTRY	46.5% 369	40.3% 221	44.0% 590	75.0% 78	77.4% 48	75.9% 126	60.0% 24	53.8% 7	58.5% 31
PHYSICAL SCIENCE	1.0% 8	2.2% 12	1.5% 20	1.9% 2	.0% 0	1.2% 2	.0% 0	.0% 0	.0% 0
CHEM ENG	2.1% 17	.7% 4	1.6% 21	1.9% 2	1.6% 1	1.8% 3	2.5% 1	7.7% 1	3.8% 2
OTHER ENG	.6% 5	.5% 3	.6% 8	1.0% 1	.0% 0	.6% 1	2.5% 1	.0% 0	1.9% 1
BIOCHEMISTRY	8.7% 69	11.1% 61	9.7% 130	6.7% 7	9.7% 6	7.8% 13	15.0% 6	15.4% 2	15.1% 8
LIFE SCIENCE	2.3% 18	3.6% 20	2.8% 38	1.0% 1	3.2% 2	1.8% 3	2.5% 1	7.7% 1	3.8% 2
MEDICINE	30.6% 243	25.7% 141	28.6% 384	2.9% 3	3.2% 2	3.0% 5	10.0% 4	15.4% 2	11.3% 6
DENTISTRY	2.8% 22	1.3% 7	2.2% 29	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
PHARMACY	1.3% 10	5.5% 30	3.0% 40	3.8% 4	.0% 0	2.4% 4	2.5% 1	.0% 0	1.9% 1
BUSINESS	.4% 3	.7% 4	.5% 7	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
EDUCATION	.3% 2	2.2% 12	1.0% 14	1.9% 2	1.6% 1	1.8% 3	.0% 0	.0% 0	.0% 0
LAW	.9% 7	1.6% 9	1.2% 16	1.0% 1	.0% 0	.6% 1	2.5% 1	.0% 0	1.9% 1
OTHER	2.6% 21	4.4% 24	3.4% 45	2.9% 3	3.2% 2	3.0% 5	2.5% 1	.0% 0	1.9% 1
TOTAL	100.0% 794	100.0% 548	100.0% 1342	100.0% 104	100.0% 62	100.0% 166	100.0% 40	100.0% 13	100.0% 53

Table C-5

BS CHEMISTRY GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1991
by FIELD OF ADVANCED STUDIES and CERTIFICATION
1991 Starting Salary Survey

	CURRICULUM APPROVED?		TOTAL
	NO	YES	
FIELD OF FURTHER STUDIES			
CHEMISTRY	26.0% 178	62.7% 412	44.0% 590
PHYSICAL SCIENCE	1.0% 7	2.0% 13	1.5% 20
CHEM ENG	1.5% 10	1.7% 11	1.6% 21
OTHER ENG	.1% 1	1.1% 7	.6% 8
BIOCHEMISTRY	10.9% 75	8.4% 55	9.7% 130
LIFE SCIENCE	4.1% 28	1.5% 10	2.8% 38
MEDICINE	40.6% 278	16.1% 106	28.6% 384
DENTISTRY	3.6% 25	.6% 4	2.2% 29
PHARMACY	4.2% 29	1.7% 11	3.0% 40
BUSINESS	.6% 4	.5% 3	.5% 7
EDUCATION	1.5% 10	.6% 4	1.0% 14
LAW	1.5% 10	.9% 6	1.2% 16
OTHER	4.4% 30	2.3% 15	3.4% 45
TOTAL	100.0% 685	100.0% 657	100.0% 1342

Table C-6

CHEMICAL ENGINEERING GRADUATES WHO PLAN FULL-TIME STUDIES IN FALL 1991
by FIELD OF ADVANCED STUDY, SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
FIELD OF FURTHER STUDIES						
CHEMISTRY	4.0% 5	2.1% 1	3.5% 6	2.0% 1	5.9% 1	3.0% 2
PHYSICAL SCIENCE	2.4% 3	.0% 0	1.7% 3	2.0% 1	.0% 0	1.5% 1
CHEM ENG	73.6% 92	76.6% 36	74.4% 128	88.0% 44	88.2% 15	88.1% 59
OTHER ENG	4.0% 5	2.1% 1	3.5% 6	2.0% 1	.0% 0	1.5% 1
LIFE SCIENCE	.8% 1	.0% 0	.6% 1	.0% 0	.0% 0	.0% 0
MEDICINE	6.4% 8	8.5% 4	7.0% 12	.0% 0	5.9% 1	1.5% 1
PHARMACY	.0% 0	.0% 0	.0% 0	2.0% 1	.0% 0	1.5% 1
BUSINESS	1.6% 2	6.4% 3	2.9% 5	.0% 0	.0% 0	.0% 0
LAW	5.6% 7	.0% 0	4.1% 7	.0% 0	.0% 0	.0% 0
OTHER	1.6% 2	4.3% 2	2.3% 4	4.0% 2	.0% 0	3.0% 2
TOTAL	100.0% 125	100.0% 47	100.0% 172	100.0% 50	100.0% 17	100.0% 67

Table C-7

BS CHEMISTRY GRADUATES WHO ARE NOT EMPLOYED and NOT SEEKING EMPLOYMENT
by SEX and PLANS FOR FURTHER STUDIES
1991 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
PURSUE ADVANCED STUDIES IN FALL 91			
YES, FULL-TIME	87.6% 169	84.5% 131	86.2% 300
YES, PART-TIME	2.6% 5	5.8% 9	4.0% 14
NO	9.8% 19	9.7% 15	9.8% 34
TOTAL	100.0% 193	100.0% 155	100.0% 348

Table C-8

BS CHEMICAL ENGINEERING GRADUATES
WHO ARE NOT EMPLOYED and NOT SEEKING EMPLOYMENT
by SEX and PLANS FOR FURTHER STUDIES
1991 Starting Salary Survey

	SEX		TOTAL
	MEN	WOMEN	
PURSUE ADVANCED STUDIES IN FALL 91			
YES, FULL-TIME	96.3% 26	91.7% 11	94.9% 37
NO	3.7% 1	8.3% 1	5.1% 2
TOTAL	100.0% 27	100.0% 12	100.0% 39

Table D-1

BS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1991 Starting Salary Survey

	FIELD					
	CHEMICAL ENGINEERING			CHEMISTRY		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
AGE						
20 OR UNDER	.2% 1	.7% 2	.4% 3	1.2% 16	.8% 9	1.0% 25
21	12.7% 70	16.1% 44	13.8% 114	14.0% 188	20.6% 224	17.0% 412
22	37.6% 208	41.4% 113	38.9% 321	42.7% 572	44.1% 480	43.3% 1052
23	32.2% 178	28.2% 77	30.9% 255	17.0% 228	16.4% 179	16.7% 407
24	6.9% 38	7.7% 21	7.1% 59	8.1% 108	4.7% 51	6.5% 159
25	4.0% 22	2.2% 6	3.4% 28	3.7% 50	2.8% 31	3.3% 81
26	1.1% 6	.4% 1	.8% 7	1.9% 26	2.0% 22	2.0% 48
27	1.3% 7	.4% 1	1.0% 8	2.2% 30	1.3% 14	1.8% 44
28	.5% 3	.4% 1	.5% 4	1.3% 18	1.2% 13	1.3% 31
29	.5% 3	.0% 0	.4% 3	1.7% 23	.6% 6	1.2% 29
30 to 34	1.6% 9	1.1% 3	1.5% 12	4.0% 53	3.5% 38	3.7% 91
35 to 39	1.1% 6	1.1% 3	1.1% 9	1.6% 21	1.5% 16	1.5% 37
40 to 49	.4% 2	.4% 1	.4% 3	.5% 7	.6% 6	.5% 13
50 to 64	.0% 0	.0% 0	.0% 0	.1% 1	.0% 0	.0% 1
TOTAL	100.0% 553	100.0% 273	100.0% 826	100.0% 1341	100.0% 1089	100.0% 2430

Table D-2

MS CHEMISTRY AND CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1991 Starting Salary Survey

	FIELD					
	CHEMICAL ENGINEERING			CHEMISTRY		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
AGE						
21	.0% 0	.0% 0	.0% 0	.5% 1	.0% 0	.3% 1
22	.0% 0	9.1% 3	1.9% 3	1.5% 3	.0% 0	.9% 3
23	5.6% 7	6.1% 2	5.7% 9	2.5% 5	2.9% 4	2.7% 9
24	18.4% 23	6.1% 2	15.8% 25	12.1% 24	17.1% 24	14.2% 48
25	13.6% 17	21.2% 7	15.2% 24	11.1% 22	16.4% 23	13.3% 45
26	17.6% 22	27.3% 9	19.6% 31	12.1% 24	15.7% 22	13.6% 46
27	10.4% 13	3.0% 1	8.9% 14	9.6% 19	7.9% 11	8.9% 30
28	8.8% 11	3.0% 1	7.6% 12	10.1% 20	9.3% 13	9.8% 33
29	5.6% 7	9.1% 3	6.3% 10	6.6% 13	7.9% 11	7.1% 24
30 to 34	11.2% 14	12.1% 4	11.4% 18	26.3% 52	12.1% 17	20.4% 69
35 to 39	5.6% 7	3.0% 1	5.1% 8	6.1% 12	5.0% 7	5.6% 19
40 to 49	3.2% 4	.0% 0	2.5% 4	1.5% 3	5.7% 8	3.3% 11
TOTAL	100.0% 125	100.0% 33	100.0% 158	100.0% 198	100.0% 140	100.0% 338

Table D-3

PHD CHEMISTRY and CHEMICAL ENGINEERING GRADUATES
by AGE and SEX
1991 Starting Salary Survey

	FIELD					
	CHEMICAL ENGINEERING			CHEMISTRY		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
AGE						
24	.0% 0	.0% 0	.0% 0	.0% 0	.7% 1	.2% 1
25	1.9% 2	.0% 0	1.5% 2	.5% 2	.7% 1	.5% 3
26	8.3% 9	13.0% 3	9.2% 12	4.4% 18	10.7% 16	6.1% 34
27	12.0% 13	17.4% 4	13.0% 17	15.2% 62	13.3% 20	14.7% 82
28	14.8% 16	21.7% 5	16.0% 21	17.4% 71	26.7% 40	19.9% 111
29	19.4% 21	21.7% 5	19.8% 26	9.6% 39	10.7% 16	9.9% 55
30 to 34	32.4% 35	17.4% 4	29.8% 39	37.5% 153	27.3% 41	34.8% 194
35 to 39	11.1% 12	8.7% 2	10.7% 14	10.8% 44	5.3% 8	9.3% 52
40 to 49	.0% 0	.0% 0	.0% 0	4.4% 18	4.0% 6	4.3% 24
50 to 64	.0% 0	.0% 0	.0% 0	.2% 1	.7% 1	.4% 2
TOTAL	100.0% 108	100.0% 23	100.0% 131	100.0% 408	100.0% 150	100.0% 558

Table D-4

CHEMISTRY POSTDOCTORAL RECIPIENTS
by AGE and SEX
1991 Starting Salary Survey

	MEN	WOMEN	TOTAL
AGE			
25	.0% 0	1.6% 1	.4% 1
26	2.9% 5	8.2% 5	4.3% 10
27	13.8% 24	19.7% 12	15.3% 36
28	22.4% 39	27.9% 17	23.8% 56
29	9.2% 16	9.8% 6	9.4% 22
30 to 34	41.4% 72	26.2% 16	37.4% 88
35 to 39	8.6% 15	3.3% 2	7.2% 17
40 to 49	1.7% 3	3.3% 2	2.1% 5
TOTAL	100.0% 174	100.0% 61	100.0% 235

Table E-1

FULL-TIME EMPLOYED INEXPERIENCED CHEMISTS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	44.1% 79	43.3% 84	43.7% 163	33.3% 9	39.3% 11	36.4% 20	39.6% 40	52.2% 24	43.5% 64
2	33.0% 59	32.5% 63	32.7% 122	40.7% 11	25.0% 7	32.7% 18	29.7% 30	23.9% 11	27.9% 41
3	15.6% 28	16.0% 31	15.8% 59	7.4% 2	21.4% 6	14.5% 8	21.8% 22	10.9% 5	18.4% 27
4	4.5% 8	5.2% 10	4.8% 18	11.1% 3	10.7% 3	10.9% 6	5.0% 5	13.0% 6	7.5% 11
5	2.8% 5	2.1% 4	2.4% 9	3.7% 1	3.6% 1	3.6% 2	1.0% 1	.0% 0	.7% 1
6 or 7	.0% 0	.0% 0	.0% 0	3.7% 1	.0% 0	1.8% 1	3.0% 3	.0% 0	2.0% 3
10 OR MORE	.0% 0	1.0% 2	.5% 2	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
TOTAL	100.0% 179	100.0% 194	100.0% 373	100.0% 27	100.0% 28	100.0% 55	100.0% 101	100.0% 46	100.0% 147

Table E-2

FULL-TIME EMPLOYED EXPERIENCED CHEMISTS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	47.6% 59	38.3% 46	43.0% 105	41.7% 20	24.0% 6	35.6% 26	41.3% 33	22.2% 6	36.4% 39
2	23.4% 29	29.2% 35	26.2% 64	25.0% 12	44.0% 11	31.5% 23	30.0% 24	22.2% 6	28.0% 30
3	19.4% 24	22.5% 27	20.9% 51	20.8% 10	24.0% 6	21.9% 16	16.3% 13	37.0% 10	21.5% 23
4	5.6% 7	7.5% 9	6.6% 16	8.3% 4	.0% 0	5.5% 4	5.0% 4	11.1% 3	6.5% 7
5	2.4% 3	.0% 0	1.2% 3	2.1% 1	4.0% 1	2.7% 2	3.8% 3	3.7% 1	3.7% 4
6 or 7	.8% 1	2.5% 3	1.6% 4	2.1% 1	4.0% 1	2.7% 2	3.8% 3	.0% 0	2.8% 3
8 or 9	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	3.7% 1	.9% 1
10 OR MORE	.8% 1	.0% 0	.4% 1	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
TOTAL	100.0% 124	100.0% 120	100.0% 244	100.0% 48	100.0% 25	100.0% 73	100.0% 80	100.0% 27	100.0% 107

Table E-3

FULL-TIME EMPLOYED INEXPERIENCED CHEMICAL ENGINEERS
by NUMBER OF JOB OFFERS, SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	34.9% 80	23.7% 28	31.1% 108	27.3% 6	.0% 0	23.1% 6	32.1% 17	38.5% 5	33.3% 22
2	20.1% 46	26.3% 31	22.2% 77	36.4% 8	25.0% 1	34.6% 9	30.2% 16	23.1% 3	28.8% 19
3	17.9% 41	18.6% 22	18.2% 63	27.3% 6	50.0% 2	30.8% 8	17.0% 9	7.7% 1	15.2% 10
4	8.3% 19	9.3% 11	8.6% 30	.0% 0	25.0% 1	3.8% 1	7.5% 4	15.4% 2	9.1% 6
5	6.6% 15	11.0% 13	8.1% 28	4.5% 1	.0% 0	3.8% 1	5.7% 3	.0% 0	4.5% 3
6 or 7	7.9% 18	7.6% 9	7.8% 27	4.5% 1	.0% 0	3.8% 1	5.7% 3	.0% 0	4.5% 3
8 or 9	2.6% 6	2.5% 3	2.6% 9	.0% 0	.0% 0	.0% 0	1.9% 1	7.7% 1	3.0% 2
10 OR MORE	1.7% 4	.8% 1	1.4% 5	.0% 0	.0% 0	.0% 0	.0% 0	7.7% 1	1.5% 1
TOTAL	100.0% 229	100.0% 118	100.0% 347	100.0% 22	100.0% 4	100.0% 26	100.0% 53	100.0% 13	100.0% 66

Table E-4

FULL-TIME EMPLOYED EXPERIENCED CHEMICAL ENGINEERS
by NUMBER OF JOB OFFERS,SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
OFFERS OF EMPLOYMENT									
1	20.7% 29	20.5% 15	20.7% 44	23.5% 8	12.5% 1	21.4% 9	38.9% 14	.0% 0	35.9% 14
2	22.1% 31	16.4% 12	20.2% 43	32.4% 11	37.5% 3	33.3% 14	27.8% 10	33.3% 1	28.2% 11
3	16.4% 23	17.8% 13	16.9% 36	17.6% 6	25.0% 2	19.0% 8	8.3% 3	33.3% 1	10.3% 4
4	12.1% 17	12.3% 9	12.2% 26	5.9% 2	12.5% 1	7.1% 3	13.9% 5	33.3% 1	15.4% 6
5	11.4% 16	13.7% 10	12.2% 26	11.8% 4	.0% 0	9.5% 4	.0% 0	.0% 0	.0% 0
6 or 7	10.0% 14	9.6% 7	9.9% 21	.0% 0	12.5% 1	2.4% 1	8.3% 3	.0% 0	7.7% 3
8 or 9	2.9% 4	8.2% 6	4.7% 10	2.9% 1	.0% 0	2.4% 1	2.8% 1	.0% 0	2.6% 1
10 OR MORE	4.3% 6	1.4% 1	3.3% 7	5.9% 2	.0% 0	4.8% 2	.0% 0	.0% 0	.0% 0
TOTAL	100.0% 140	100.0% 73	100.0% 213	100.0% 34	100.0% 8	100.0% 42	100.0% 36	100.0% 3	100.0% 39

Table F-1

BS CHEMISTRY GRADUATES
by CITIZENSHIP, ETHNICITY, and DEGREE
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	100.0% 16	40.0% 28	26.8% 11	35.2% 38	85.9% 79	77.6% 45	97.2% 1982	57.1% 8	90.5% 2207
U.S. NATURALIZED	.0% 0	28.6% 20	51.2% 21	35.2% 38	4.3% 4	13.8% 8	1.5% 30	21.4% 3	5.1% 124
U.S. PERMANENT RESIDENT	.0% 0	17.1% 12	14.6% 6	22.2% 24	7.6% 7	6.9% 4	1.0% 21	14.3% 2	3.1% 76
OTHER VISA	.0% 0	14.3% 10	7.3% 3	7.4% 8	2.2% 2	1.7% 1	.3% 7	7.1% 1	1.3% 32
TOTAL	100.0% .7% 16	100.0% 2.9% 70	100.0% 1.7% 41	100.0% 4.4% 108	100.0% 3.8% 92	100.0% 2.4% 58	100.0% 83.6% 2040	100.0% .6% 14	100.0% 100.0% 2439

Table F-1 (Continued)

MS CHEMISTRY GRADUATES
by CITIZENSHIP, ETHNICITY, and DEGREE
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	.0% 0	1.6% 1	14.3% 1	4.0% 1	44.4% 4	55.6% 5	92.6% 212	40.0% 2	65.1% 226
U.S. NATURALIZED	.0% 0	3.2% 2	14.3% 1	8.0% 2	.0% 0	22.2% 2	1.7% 4	.0% 0	3.2% 11
U.S. PERMANENT RESIDENT	.0% 0	6.3% 4	.0% 0	16.0% 4	11.1% 1	.0% 0	.9% 2	.0% 0	3.2% 11
OTHER VISA	.0% 0	88.9% 56	71.4% 5	72.0% 18	44.4% 4	22.2% 2	4.8% 11	60.0% 3	28.5% 99
TOTAL	.0% .0% 0	100.0% 18.2% 63	100.0% 2.0% 7	100.0% 7.2% 25	100.0% 2.6% 9	100.0% 2.6% 9	100.0% 66.0% 229	100.0% 1.4% 5	100.0% 100.0% 347

Table F-1 (Continued)

PhD CHEMISTRY GRADUATES
by CITIZENSHIP, ETHNICITY, and DEGREE
1991 Starting Salary Survey

	RACE OR ETHNIC GROUP								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	100.0% 1	3.7% 4	.0% 0	10.9% 5	53.8% 7	40.0% 6	91.1% 336	40.0% 2	63.8% 361
U.S. NATURALIZED	.0% 0	.9% 1	10.0% 1	4.3% 2	.0% 0	13.3% 2	2.2% 8	.0% 0	2.5% 14
U.S. PERMANENT RESIDENT	.0% 0	7.5% 8	10.0% 1	13.0% 6	15.4% 2	20.0% 3	3.0% 11	40.0% 2	5.8% 33
OTHER VISA	.0% 0	87.9% 94	80.0% 8	71.7% 33	30.8% 4	26.7% 4	3.8% 14	20.0% 1	27.9% 158
TOTAL	100.0% .2% 1	100.0% 18.9% 107	100.0% 1.8% 10	100.0% 8.1% 46	100.0% 2.3% 13	100.0% 2.7% 15	100.0% 65.2% 369	100.0% .9% 5	100.0% 100.0% 566

Table F-2

CHEMISTRY GRADUATES
by CITIZENSHIP, SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
CITIZENSHIP									
U.S. NATIVE	91.3% 1233	89.3% 983	90.4% 2216	66.0% 136	64.3% 92	65.3% 228	59.2% 244	75.7% 115	63.7% 359
U.S. NATURALIZED	5.0% 67	5.4% 59	5.1% 126	3.9% 8	2.1% 3	3.2% 11	3.4% 14	.0% 0	2.5% 14
U.S. PERMANENT RESIDENT	2.9% 39	3.5% 38	3.1% 77	4.4% 9	1.4% 2	3.2% 11	6.6% 27	3.9% 6	5.9% 33
OTHER VISA	.8% 11	1.9% 21	1.3% 32	25.7% 53	32.2% 46	28.4% 99	30.8% 127	20.4% 31	28.0% 158
TOTAL	100.0% 1350	100.0% 1101	100.0% 2451	100.0% 206	100.0% 143	100.0% 349	100.0% 412	100.0% 152	100.0% 564

Table F-3

MINORITY CHEMISTRY GRADUATES
by MINORITY CLASSIFICATION, SEX, AND DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
MINORITY CLASSIFICATION									
AMER INDIAN	.6% 1	6.8% 15	4.0% 16	.0% 0	.0% 0	.0% 0	.6% 1	.0% 0	.5% 1
CHINESE	19.6% 35	15.9% 35	17.5% 70	51.5% 35	56.0% 28	53.4% 63	54.5% 85	53.7% 22	54.3% 107
SUBCONT INDIAN	15.1% 27	6.4% 14	10.3% 41	4.4% 3	8.0% 4	5.9% 7	5.1% 8	4.9% 2	5.1% 10
OTHER ASIAN	27.9% 50	26.4% 58	27.1% 108	19.1% 13	24.0% 12	21.2% 25	23.1% 36	24.4% 10	23.4% 46
BLACK	17.3% 31	27.7% 61	23.1% 92	8.8% 6	6.0% 3	7.6% 9	6.4% 10	7.3% 3	6.6% 13
HISPANIC	16.8% 30	12.7% 28	14.5% 58	8.8% 6	6.0% 3	7.6% 9	7.7% 12	7.3% 3	7.6% 15
OTHER	2.8% 5	4.1% 9	3.5% 14	7.4% 5	.0% 0	4.2% 5	2.6% 4	2.4% 1	2.5% 5
TOTAL	100.0% 179	100.0% 220	100.0% 399	100.0% 68	100.0% 50	100.0% 118	100.0% 156	100.0% 41	100.0% 197

Table F-4

BS CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP, ETHNICITY, and DEGREE
1991 Starting Salary Survey

	MINORITY CLASSIFICATION								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	100.0% 8	18.8% 3	33.3% 3	33.3% 9	100.0% 18	72.7% 16	97.7% 709	100.0% 3	92.8% 769
U.S. NATURALIZED	.0% 0	56.3% 9	44.4% 4	33.3% 9	.0% 0	4.5% 1	1.0% 7	.0% 0	3.6% 30
U.S. PERMANENT RESIDENT	.0% 0	18.8% 3	11.1% 1	7.4% 2	.0% 0	9.1% 2	1.4% 10	.0% 0	2.2% 18
OTHER VISA	.0% 0	6.3% 1	11.1% 1	25.9% 7	.0% 0	13.6% 3	.0% 0	.0% 0	1.4% 12
TOTAL	100.0% 1.0% 8	100.0% 1.9% 16	100.0% 1.1% 9	100.0% 3.3% 27	100.0% 2.2% 18	100.0% 2.7% 22	100.0% 87.6% 726	100.0% .4% 3	100.0% 100.0% 829

Table F-4 (Continued)

MS CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP, ETHNICITY, and DEGREE
1991 Starting Salary Survey

	MINORITY CLASSIFICATION								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	.0% 0	5.0% 1	.0% 0	33.3% 1	100.0% 1	57.1% 4	83.8% 83	16.7% 1	56.5% 91
U.S. NATURALIZED	.0% 0	10.0% 2	4.0% 1	.0% 0	.0% 0	.0% 0	3.0% 3	.0% 0	3.7% 6
U.S. PERMANENT RESIDENT	.0% 0	10.0% 2	4.0% 1	.0% 0	.0% 0	.0% 0	3.0% 3	16.7% 1	4.3% 7
OTHER VISA	.0% 0	75.0% 15	92.0% 23	66.7% 2	.0% 0	42.9% 3	10.1% 10	66.7% 4	35.4% 57
TOTAL	.0% .0% 0	100.0% 12.4% 20	100.0% 15.5% 25	100.0% 1.9% 3	100.0% .6% 1	100.0% 4.3% 7	100.0% 61.5% 99	100.0% 3.7% 6	100.0% 100.0% 161

Table F-4 (Continued)

PhD CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP, ETHNICITY, and DEGREE
1991 Starting Salary Survey

	MINORITY CLASSIFICATION								TOTAL
	AMER INDIAN	CHINESE	SUBCONT INDIAN	OTHER ASIAN	BLACK	HISP	WHITE	OTHER	
CITIZENSHIP									
U.S. NATIVE	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	75.0% 3	87.1% 74	100.0% 1	58.2% 78
U.S. NATURALIZED	.0% 0	17.6% 3	.0% 0	11.1% 1	.0% 0	.0% 0	2.4% 2	.0% 0	4.5% 6
U.S. PERMANENT RESIDENT	.0% 0	23.5% 4	.0% 0	22.2% 2	.0% 0	.0% 0	7.1% 6	.0% 0	9.0% 12
OTHER VISA	.0% 0	58.8% 10	100.0% 17	66.7% 6	100.0% 1	25.0% 1	3.5% 3	.0% 0	28.4% 38
TOTAL	.0% .0% 0	100.0% 12.7% 17	100.0% 12.7% 17	100.0% 6.7% 9	100.0% .7% 1	100.0% 3.0% 4	100.0% 63.4% 85	100.0% .7% 1	100.0% 100.0% 134

Table F-5

CHEMICAL ENGINEERING GRADUATES
by CITIZENSHIP, SEX, and DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
CITIZENSHIP									
U.S. NATIVE	92.3% 516	93.8% 258	92.8% 774	54.3% 69	64.7% 22	56.5% 91	58.2% 64	58.3% 14	58.2% 78
U.S. NATURALIZED	3.4% 19	4.0% 11	3.6% 30	.8% 1	14.7% 5	3.7% 6	4.5% 5	4.2% 1	4.5% 6
U.S. PERMANENT RESIDENT	2.7% 15	1.1% 3	2.2% 18	4.7% 6	2.9% 1	4.3% 7	6.4% 7	20.8% 5	9.0% 12
OTHER VISA	1.6% 9	1.1% 3	1.4% 12	40.2% 51	17.6% 6	35.4% 57	30.9% 34	16.7% 4	28.4% 38
TOTAL	100.0% 559	100.0% 275	100.0% 834	100.0% 127	100.0% 34	100.0% 161	100.0% 110	100.0% 24	100.0% 134

Table F-6

MINORITY CHEMICAL ENGINEERING GRADUATES
by MINORITY CLASSIFICATION, SEX, AND DEGREE
1991 Starting Salary Survey

	BS			MS			PHD		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
RACE OR ETHNIC GROUP									
AMER INDIAN	9.0% 6	5.6% 2	7.8% 8	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0	.0% 0
CHINESE	16.4% 11	13.9% 5	15.5% 16	28.0% 14	50.0% 6	32.3% 20	36.4% 16	20.0% 1	34.7% 17
SUBCONT INDIAN	10.4% 7	5.6% 2	8.7% 9	46.0% 23	16.7% 2	40.3% 25	36.4% 16	20.0% 1	34.7% 17
OTHER ASIAN	26.9% 18	25.0% 9	26.2% 27	6.0% 3	.0% 0	4.8% 3	15.9% 7	40.0% 2	18.4% 9
BLACK	10.4% 7	30.6% 11	17.5% 18	2.0% 1	.0% 0	1.6% 1	2.3% 1	.0% 0	2.0% 1
HISPANIC	22.4% 15	19.4% 7	21.4% 22	6.0% 3	33.3% 4	11.3% 7	6.8% 3	20.0% 1	8.2% 4
OTHER	4.5% 3	.0% 0	2.9% 3	12.0% 6	.0% 0	9.7% 6	2.3% 1	.0% 0	2.0% 1
TOTAL	100.0% 67	100.0% 36	100.0% 103	100.0% 50	100.0% 12	100.0% 62	100.0% 44	100.0% 5	100.0% 49

American Chemical Society

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4534

JOHN K CRUM
Executive Director

Summer 1991

Dear Colleague:

Every year, the American Chemical Society conducts a mail survey of persons who have recently earned degrees in chemistry or chemical engineering. Published results, which include information about salaries and employment, are useful to the profession, and especially to those beginning their careers.

I urge you, as a service to your colleagues and profession, to respond to this year's questionnaire. The procedure is *confidential*. The information you provide will be combined with returns from other graduates so that only aggregated data will be available. To ensure confidentiality, your name and address will *not* be coded with the information you provide.

Please complete this questionnaire and return it promptly. For your convenience, I have enclosed a self-addressed, postage-paid envelope. Results of the survey will be published in the *Chemical and Engineering News'* Career Issue this October and in a more extensive report later in the year.

Thank you for your assistance with this survey. I extend my best wishes for every success in your professional pursuits.

Sincerely,

John K Crum

John K Crum

Enclosure

AMERICAN CHEMICAL SOCIETY

Survey of Starting Salaries and Employment Status of 1991 Chemistry and Chemical Engineering Graduates

1. Highest degree earned:

- Bachelor's ☐ 1
- Master's ☐ 2
- Doctorate ☐ 3

2. Field of highest degree:

- Chemical engineering ☐ 01
- Biochemical engineering ☐ 02
- Biochemistry ☐ 03
- General chemistry ☐ 04
- Analytical chemistry ☐ 05
- Inorganic chemistry ☐ 06
- Organic chemistry ☐ 07
- Physical chemistry ☐ 08
- Polymer chemistry ☐ 09
- Other chemistry ☐ 10
- Other (please specify) _____ ☐ 11

3. Please describe the school that granted your degree:

a. Public ☐ 1
Private ☐ 2

b. Total number of students:
- Less than 1,500 ☐ 1
- 1,500 to 4,999 ☐ 2
- 5,000 to 9,999 ☐ 3
- 10,000 to 19,999 ☐ 4
- 20,000 or more ☐ 5

c. The highest degree offered by your department is:
- BS ☐ 1
- MS ☐ 2
- PhD ☐ 3

d. Location of school. Please give first three digits of zip code:
___ ___ ___

e. Is the school an historically or predominantly black institution?
- Yes ☐ 1
- No ☐ 2

f. Is the school a traditionally women's institution?
- Yes ☐ 1
- No ☐ 2

4. How would you rate the state of equipment and instrumentation in your chemistry or chemical engineering classes?

a. The type of equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

b. The access to equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

c. How up-to-date was the equipment?
- Extremely ☐ 1
- Moderately ☐ 2
- Not at all ☐ 3

5. How would you rate the state of computer equipment and software in your chemistry or chemical engineering classes?

a. The type of computer equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

b. The type of computer software was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

c. The access to computer equipment was:
- Excellent ☐ 1
- Adequate ☐ 2
- Inadequate ☐ 3

d. How up-to-date was the computer equipment?
- Extremely ☐ 1
- Moderately ☐ 2
- Not at all ☐ 3

IF HIGHEST DEGREE EARNED WAS A MASTER'S OR DOCTORATE, PLEASE SKIP TO QUESTION 9.

6. In your chemistry classes, did you get a chance to:

a. Work in teams?
- Yes ☐ 1
- No ☐ 2

b. Work on independent research projects?
- Yes ☐ 1
- No ☐ 2

7. Did you participate in a chemistry or chemical engineering cooperative education program while in college?

- Yes ☐ 1
- No ☐ 2

8. Grade point average:
[Use A = 4.00; B = 3.00; C = 2.00]

In your major _____

Overall _____

9. Will you pursue advanced studies in the fall of 1991?

- Yes, full-time ☐ 1
- Yes, part-time ☐ 2
- No ☐ 3

a. If yes, field of further studies:
- Chemistry ☐ 01
- Other physical science, computer science or mathematics ☐ 02
- Chemical engineering or biochemical engineering ☐ 03
- Other engineering ☐ 04
- Biochemistry ☐ 05
- Life science ☐ 06
- Medicine ☐ 07
- Dentistry ☐ 08
- Pharmacy, pharmacology ☐ 09
- Business management ☐ 10
- Education ☐ 11
- Law ☐ 12
- Other ☐ 13

10. Age at last birthday? ___ ___ years old

11. Sex:
- Male ☐ 1
- Female ☐ 2

12. Citizenship or visa status:
- U.S. native ☐ 1
- U.S. naturalized ☐ 2
- U.S. permanent resident visa ☐ 3
- Other visa ☐ 4

13. Race or ethnic group:
- American Indian or Alaskan Native ☐ 1
- Chinese ☐ 2
- Subcontinental Indian ☐ 3
- Other Asian or Pacific Islander ☐ 4
- Black (not of Hispanic origin) ☐ 5
- Hispanic ☐ 6
- White (not of Hispanic origin) ☐ 7
- Other race or ethnic group ☐ 8

14. Current employment status:
- Accepted or continuing full-time employment (excluding summer employment) ☐ 1
- Accepted a graduate assistantship, fellowship or postdoctoral fellowship. ☐ 2
- Part-time employment ☐ 3
- Temporary/summer employment ☐ 4
- Not employed ☐ 5

a. If not continuing full-time employment, are you:
- *seeking* full-time, year-round employment ☐ 1
- *not seeking* full-time, year-round employment ☐ 2

IF YOU CHECKED BOX 3, 4, OR 5 IN QUESTION 14, PLEASE STOP HERE AND RETURN THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED

15. Your base annual salary from principal job:

$ _____ per year

IF YOU HOLD AN ASSISTANTSHIP OR FELLOWSHIP, PLEASE STOP HERE AND RETURN THE QUESTIONNAIRE IN THE ENVELOPE PROVIDED.

16. How many firm offers of employment did you receive in a field of chemistry or chemical engineering?

Specify number _____

17. Professional or technical work experience prior to graduation
- Less than 12 months (or none) ☐ 1
- 12 to 36 months ☐ 2
- More than 36 months ☐ 3

18. Check the one specialty most related to your job:
- Chemical engineering ☐ 1
- Chemistry (including biochemistry) ☐ 2
- Other ☐ 3

19. Check the one category that best describes your employer:
- Private industry ☐ 1
- College or university ☐ 2
- High school or other school ☐ 3
- Federal government (civilian) ☐ 4
- Military ☐ 5
- State or local government ☐ 6
- Hospital or independent laboratory ☐ 7
- Other ☐ 8

20. If you are employed in private industry, check the one category that best describes the type of industry:
- Nonmanufacturing ☐ 01
- Manufacturing
  - Aerospace ☐ 02
  - Basic chemicals ☐ 03
  - Specialty chemicals ☐ 04
  - Agricultural chemicals ☐ 05
  - Electronics ☐ 06
  - Petroleum, natural gas ☐ 07
  - Pharmaceuticals, personal care ☐ 08
  - Plastics ☐ 09
  - Other manufactures ☐ 10

21. Check the one work function that best describes your job:
- Teaching ☐ 1
- Management or administration ☐ 2
- Basic Research ☐ 3
- Applied research/Development/Design ☐ 4
- Production/Quality control ☐ 5
- Other ☐ 6

a. Is your job classified as a technician position?
- Yes ☐ 1
- No ☐ 2

22. Employer's approximate number of employees (total for the whole organization):
- Less than 500 ☐ 1
- 500 to 2,499 ☐ 2
- 2,500 to 9,999 ☐ 3
- 10,000 to 24,999 ☐ 4
- 25,000 or more ☐ 5

23. Geographic location of employment: Please give first three digits of zip code.

___ ___ ___

Comments:

THANK YOU FOR YOUR PARTICIPATION

PLEASE RETURN THIS QUESTIONNAIRE PROMPTLY TO

ACS STARTING SALARY SURVEY
ROOM 610, 1155 16th Street NW, Washington, DC 20036

ACS MEMBER SERVICES PUBLICATIONS

Salaries: The Society annually surveys the ACS membership, gathering detailed information on member chemists and chemical engineers. The reports based on this survey contain statistical tables describing the respondents' employment status, employer, work function and specialty, salaries, and demographic characteristics.

Reports are available for each year from 1973 through the current year. For 1987, four separate reports are available: *1987 Salaries of Non-Academic Chemists, 1987 Salaries of Non-Academic Chemical Engineers, 1987 Salaries of Academic Chemists, and 1987 Employment Status and Demographic Characteristics of ACS Members.*

Starting Salaries: ACS also surveys new graduates in chemistry and chemical engineering each year, and publishes reports detailing the graduates' employment status, post-graduation plans, starting salaries and other employment and demographic characteristics.

Reports are available for each year from 1975.

Professionals in Chemistry: The *Professionals in Chemistry* series compiled information concerning chemists and chemical engineers from ACS, government, and private industry sources. It detailed information on demography, employment, salaries, education, and supply and demand for the entire chemical profession.

Reports are available for each year from 1975 through 1978, and combined reports for 1979-1980, 1981-82, 1983-84, and 1985-86.

Special Reports:

1975 Report of Chemists' Salaries and Employment Status Supplement: Economic Status of Women in the ACS.

Women Chemists 1980: A supplemental report on the ACS's 1980 Survey of Salaries and Employment.

Women Chemists 1985: A supplemental report on the ACS's 1985 Survey of Salaries and Employment.

Women Chemists 1990: A supplemental report on the ACS's 1990 Survey of Salaries and Employment.

For prices and ordering information, please call or write:

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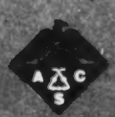

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